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THE

EDUCATIONAL TIMES,

AND

Journal of the College of Preceptors.

Vol. LX.] New Series, No. 549. JANUARY 1, 1907. {*Published Monthly, price, to Non-Members, 6d.; by Post, 7d. Annual Subscription, 7s.*

COLLEGE OF PRECEPTORS.—The Half-Yearly General Meeting of the Members of the Corporation will be held at the College, Bloomsbury Square, W.C., on Saturday, the 26th of January, 1907, at 3 p.m. C. R. HODGSON, B.A., *Secretary.*

COLLEGE OF PRECEPTORS.
(Bloomsbury Square, W.C.)

The Council of the College of Preceptors will shortly proceed to the appointment of additional EXAMINERS in FRENCH. Candidates should have had considerable experience in teaching. Applications (twenty copies), stating age, experience in teaching and examining, &c., should be addressed to the DEAN of the College not later than the 31st of January, 1907. If testimonials are sent, they should be not more than three in number, and twenty copies of each should be forwarded.

[Applications which were forwarded in response to the advertisement which appeared in the April number of *The Educational Times* will be considered with any which may be sent in reply to the above advertisement.]

C. R. HODGSON, B.A., *Secretary.*

COLLEGE OF PRECEPTORS.—
EXAMINATIONS, 1907.

1. DIPLOMAS.—The next Examination of Teachers for the Diplomas of the College will commence on the **26th of August.**

2. PRACTICAL EXAMINATION FOR CERTIFICATES OF ABILITY TO TEACH. — The next Practical Examination will be held in **February,** 1907.

3. CERTIFICATE EXAMINATIONS. — The Midsummer Examination for Certificates will commence on the 25th of June.

4. LOWER FORMS EXAMINATIONS. — The Midsummer Examination will commence on the 25th of June.

5. PROFESSIONAL PRELIMINARY EXAMINATIONS.—These Examinations are held in March and September. The Spring Examination in 1907 will commence on the 5th of March.

6. INSPECTION AND EXAMINATION OF SCHOOLS.—Inspectors and Examiners are appointed by the College for the Inspection and Examination of Public and Private Schools.

PRIZES.

Diploma Examination.—The following Prizes will be offered for competition:—Theory and Practice of Education, £10; Classics (Greek and Latin), £5; Mathematics, £5; Natural Science, £5. The Doreck Scholarship of £20 will be awarded on the results of the Christmas Examination.

Certificate Examination.—Prizes will be awarded as follows, subject to the conditions stated in the Regulations:—

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The Examination will take place in London, and at the following Local Centres:—Birmingham, Bristol, Cardiff, Leeds, Liverpool, Manchester, Newcastle-on-Tyne.

Examination Fee, 25s. A local fee is payable by candidates examined at Provincial Centres.

Regulations and Entry Forms may be obtained on application to the Secretary.

C. R. HODGSON, B.A., *Secretary.*

COLLEGE OF PRECEPTORS.—The MEMBERS' DINNER will take place at the Hotel Cecil, Strand, W.C., on Saturday, the 26th of January, at 6.30 p.m. Tickets (not including wine), 6s. each. Members who intend to be present are requested to send early notice to the SECRETARY. Members may obtain tickets for their friends.

C. R. HODGSON, B.A., *Secretary.*

COLLEGE OF PRECEPTORS.—
(Bloomsbury Square, W.C.)

LECTURES FOR TEACHERS.

A.—The First Course of Lectures (Thirty-fifth Annual Series), by Prof. J. ADAMS, M.A., B.Sc., F.C.P., on "The Psychological Bases of Teaching and Education," will commence on Thursday, February 14th, at 7 p.m.

The Course is meant to meet the needs of Teachers who wish to improve their acquaintance with what underlies the principles of their profession, whether they have any examination in view or not. The Lecturer will treat his subject in such way as to fit in with the requirements of the College in connexion with the Examinations for the Associateship, the Licentiateship, and the Fellowship. The reading of the students will be guided, and problems set for their exercise. Every opportunity will be taken of making practical applications of psychological principles to the work of the class-room. *For Syllabus see p.* 18. The Fee for the Course is Half-a-guinea. The Lectures will be delivered on Thursday Evenings at 7 o'clock, at the College, Bloomsbury Square, W.C.

B.—A Course of Lectures on **Voice Production** will be delivered after Easter. Students who desire to attend this Course are requested to send early notice to the Secretary.

C.—Arrangements will be made for a Course of Lessons on **Blackboard Drawing** in the early part of the year, provided that not fewer than ten students attend. Students who desire to attend this Course are requested to make early application to the Secretary of the College.

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The Educational Times.

Curricula. THE recent resolution of the Federal Council—"That, in view of the chaotic condition of the curricula of secondary schools, this Council is of opinion that the time has arrived to obtain an authoritative pronouncement on the whole question from a body of experts appointed for the purpose"—raises a difficult question, and one which becomes especially serious when pupils pass from one school to another. Compared with the elaborately organized arrangements of Continental schools, the practice of English educationists might be stigmatized as happy-go-lucky. The nearest approach to system in this country is the requirement by some of the public schools of a certain amount of classical knowledge as a condition of entrance. This is objected to by the preparatory schools as militating against their efforts to do the best for the average boy of tender age, and as tending to promote cramming instead of the well ordered training they would gladly supply. But the problem is infinitely more far-reaching. The Board of Education, by limiting its grants to schools in which a four years' curriculum is in force, has given a lead in the Continental direction. It is not to be supposed, however, that well organized English schools are without curricula of their own, consciously or unconsciously arranged, for pupils who follow their course throughout. Such curricula are more or less independent. Examinations like those of the Oxford and Cambridge Joint Board and the London Matriculation supply a *terminus ad quem*, while the Locals and the College of Preceptors Examinations help to regulate the intermediate stages. Still, the liberty of choice which English schoolmasters and parents value so highly tends, with all its advantages, to leave serious gaps in the knowledge of many boys and girls. The College used, some years ago, to prescribe more definitely than at present certain combinations of subjects intended to secure, at each stage, a coherent system of education. Now it leaves teachers an almost complete freedom of selection, and, even if the schoolmaster selects with judgment, there is still the parent to be dealt with. As yet there is no general understanding as to what a boy or girl of twelve, fourteen, or sixteen ought to know, or, at any rate, to have gone systematically through. Nor is this all. Our system of promotion, depending, as it does, rather on power or sharpness than on age, has much to recommend it, but has obvious defects. The boy of sixteen or over who does not reach the sixth form, or who even does not rise above the middle of the school, must often stop short of the point at which studies suitable to his age are put before him, and find himself engaged in a dreary and apparently hopeless competition with much younger pupils. Thus, he often leaves school with but little power of expressing himself clearly in his own language, and with the vaguest knowledge of ordinary subjects like geography, history, or the elements of physical science—not to mention modern languages.

Again, every schoolmaster knows how difficult it is, if he starts with a tolerably even class at the beginning of a term, to keep its members together after a few weeks, and this difficulty increases if he desires to keep them on even a passable level for a whole year. Either the best pupils must be worked below their powers, to their obvious discouragement, or undue pressure must be put on the weaker vessels. In arithmetic, for example, the half-dozen sums that can barely be done by the tail of the class in an hour's lesson are finished in a few minutes by its head. In a construing lesson it is often hopeless to put on the lower boys in the second half of the passage prepared, unless, indeed, the crib comes into play, and half the hour is reduced to a conversation between the teacher and two or three picked boys, while each of the rank and file "sequitur ducem non passibus aequis," if, indeed, he can be said to follow at all.

Supposing the problem of keeping groups of pupils in a condition to work on together, which is apparently solved in Germany—and it would be instructive to learn exactly how—to be mastered, there remains the question of regulating the various curricula in such a way as to run on the same lines through their early stages. In this some progress has been made. The importance of teaching English is more generally recognized than it used to be; the elements of scientific observation, in the form either of Nature study or of elementary science, receive increasing attention, and modern methods have brought geometry and drawing into close connexion. All this helps to postpone the age of bifurcation, or rather trifurcation. The three lines answering to the *Gymnasium*, the *Realgymnasium*, and the *Realschule*

must obviously co-exist, and only the largest schools can carry on all under the same roof. Nor is it easy to set aside all considerations based on the age of leaving school. Lastly, we have to bear in mind the relation of the school to the university. The standard of a good sixth form is considerably above that of all but the advanced classes of a provincial university, and that not only in classical studies. There are evidently problems enough to tax the energies of the Committee formed by the Federal Council to advise on what they call "the chaotic condition of the curricula of secondary schools."

NOTES.

The withdrawal of the Education Bill is probably regretted by all except extremists. The situation is sufficiently awkward and disturbing. The Bill was sent up to the Lords by the enormous majority of 309 in a House of Commons but recently elected by an overwhelming vote of the people, and the Lords rejected it by 80 votes—132 to 52. A far-reaching constitutional question is thus raised, and it is not apparent how any fresh Education Bill that the Government can possibly produce can be placed on the Statute Book till that question is settled; and when and how such settlement will be effected it would require a bold man to predict. Meantime the difficulties of administration under the Act of 1902 will become more and more formidable. Mr. Birrell is too reasonable and just a man to make reprisals upon the non-provided schools; but the urgent appeal of the Bishops of London and Southwark for £50,000 to bring the Church schools in London up to modern standards is not without significance. "The London County Council," say the Bishops, "has, on the whole, been patient and considerate; but now not a few of the poorer Church schools of London are in immediate danger of being closed." The least satisfactory feature of the whole episode is that, though the Bill was strenuously discussed on what members of both Houses no doubt honestly regarded as essentially educational grounds, there remains considerable suspicion that the real grounds of its rejection had nothing to do with the interests of education. Even the *Morning Post*, while admitting that "the Government have been throughout consistent, and in strict accordance with the declared principles of their party," asks: "Are we to be forced reluctantly to the conclusion that the interests of the country, as well as of the party, have again been sacrificed to those tactical manœuvres which in the past have operated with such disastrous effect?" However this may be, the result is, and must for an indefinite period be, wide and painful embarrassment in the sphere of educational administration. Yet the eventual solution of the question has undoubtedly been advanced.

"The organization and development of the education given in secondary schools is the most important educational question of the present day. It is the pivot of the whole situation, as it affects the efficiency, intelligence, well-being of the nation."—Such is the deliverance of the Board of Education in their Report for the past year. How are things getting on, then? "The most conspicuous fact which emerges from a review of the reports on the inspection of 362 secondary schools in England conducted since December, 1904, is their demonstration of how much has yet to be done. There are many hopeful signs, there is real and widespread interest, but the shortcomings are too often little less than disastrous." Really, such a general statement might safely have been written independently of the Inspectors' reports. However, we are furnished with particulars. "Perhaps the most serious and most widespread defect in the schools inspected by the Board in the last eighteen months is the bad teaching of English." Indeed, "there is scarcely a report in which complaint is not made of the English teaching in one direction or another. Either the teachers are not qualified to teach it, or there is too little time given to the subject; there is too little attention given to reading, and the recitation books are not well chosen; or they do not exist at all—for collections of extracts are 'biblia abiblia'; or there is no instruction except in formal grammar; or, most frequently of all, there is no graduated course of study." Deduct something for inspectorial idiosyncrasies, and yet the criticism is gravely adverse. But is it not a very great step in advance to have it recognized so emphatically that English needs to be taught at all?

"Another general statement that can be made about these schools is that in almost all of them, whatever their type, the staff of assistants is underpaid and often overworked."—The remarks on this point are well worth pondering:

> As a result, teachers with inadequate qualifications are entrusted with the instruction of children who, when they are grown men and women, should do the brain-work of the nation. Even when the teacher is properly equipped he is depressed and disheartened by the conditions under which he is obliged to work, and a feeling of restlessness among the staff is engendered which results in too frequent changes; the prevalence of short-service teachers impairs the continuity of tradition. . . . In smaller schools the head master or head mistress is frequently too much occupied to be able sufficiently to supervise the work of the assistant staff; yet in such schools, owing to the small salaries and to the poorer quality of the teaching, the need of supervision is greatest. . . . Further, in such schools none of the staff have an appreciable proportion of spare time during school hours; so that scanty opportunity is given for original study, for reading new authors and subjects, and for working up old. Under such circumstances neither improvement in teaching methods nor increased freshness in dealing with new subject-matter can fairly be looked for.

The general result of a survey of the various types of public secondary schools (only 31 out of the 362 are private schools), and of "the testimony of all the most competent judges," is clearly this: "that *an improved standard of teaching power* in secondary schools is at the root of all improvements and developments." Training is needed; "the material and mental conditions" need to be improved. "It is, however, idle to expect full efficiency from a teaching staff which is inadequately paid; and in the majority of schools a substantial increase of the salary fund, with provision for both increment for length of service and for superannuation, must be regarded as a matter not only in itself urgent, but a necessary condition for getting full value out of other improvements." Just so; and the thing is to put combined and adequate pressure on the right spot.

In view of the many important questions touched upon in the Report of the Board of Education, and already in agita-

tion among educationists, it is depressing to observe that the vigour of the Head Masters' Conference was expended with most animation upon a motion for the earliest possible adoption of the system of Latin pronunciation recommended by the Classical Association. Is it not somewhere about twenty years since this system was in substance recommended by a committee of our foremost Latinists? In any case, there does not appear to be any good reason why each head master should not adopt the proposed scheme any day he likes; one or two of the head masters at this very Conference, if we mistake not, said they had already done so. If there be head masters that are determined for one reason or another to cling to a patent and proved absurdity, they are not likely to yield to mere entreaty of the brethren. The question is threshed out and done with, as the vote of three to one shows. What was immensely more needed was a free and generous handling of two or three of the more important and pressing questions of the living time, such as those that are being vigorously dealt with by the Federal Council of Secondary School Associations.

The deputation to the Prime Minister representing the Senate of the University of London and other important bodies interested in the better organization and equipment of Oriental studies in London may perhaps now take heart of grace. Sir Henry Campbell-Bannerman frankly accepted Lord Reay's proposition that they were knocking at an open door: "he did not think any door could be otherwise than open to such a claim." Indeed, their object was "obviously desirable on all grounds"; their demands were "very modest"; the case "seems to be urgent"; "what has been disclosed in your memorial of the distance that separates us from other nations who are less interested than we are in this matter, and the immense inferiority of this country in the preparation for the due exercise of its duties and the due attention to its interests in Asia, is really humiliating." Very well, let the committee be appointed and set to work, and let the money be found, without more delay.

We wish we had space to reproduce in full the fine oration delivered at Glasgow University by Principal Lindsay, of the United Free Church College there, on the occasion of the celebration of the four hundredth anniversary of the birth of George Buchanan. It was a masterly review of Buchanan's career, with intimate appreciation of its bearings upon the history of his own and of later times; and it may be doubted whether any other living historical student could have done fuller justice to the subject within the limits of an hour's address. The conditions of students at Paris in Buchanan's time, his work as a regent, or professor, at Ste. Barbe, "the most renowned college in Paris," his transition from Humanist to Reformer—these stages have their own interest; but far deeper, though partly resting on these, is the interest in Buchanan's genius and in his independent bearing in politics as well as in literature. "What have ye to do with my marriage?" asked Mary, Queen of Scots; "or what are ye within this commonwealth?" "A subject born within the same," replied Buchanan; "and, albeit I be neither earl, lord, nor baron within it, yet God has me (however abject I be in your eyes) a profitable member within the same." "Modern democracy," says Principal Lindsay, "was born in that answer, and it found reasoned speech in the treatises of Buchanan." Again: a cousin wished him to alter some sentences in his History lest he should offend the King. "Tell me," said Buchanan, "gin I have spoken the truth."—"Yes, sir, I think so." "Then I'll bide his feud and all his kin's." "Perhaps," concludes Principal Lindsay, "the greatest gift he gave his native land was himself—a genuine Scot to the marrow of his bones, who had attained an almost unique position among the learned men of Europe by his native abilities, no doubt, but also by his unwearied industry, by his patient acquisition, by the undaunted way in which he confronted poverty, danger, and continual disappointments. He stamped his image on generations of his countrymen."

SUMMARY OF THE MONTH.

The House of Lords rejected the Education Bill by a majority of 80—132 against 52. The Duke of Devonshire protested against the severance of negotiations and voted with the Government, The only Bishops that supported the Government were Chester, Hereford, and St. Asaph. Lord Lansdowne, who moved that the Lords insist on their amendments, laid main stress upon the amendments having reference to the provision of teachers. "The teachers, if I may say so, are almost the keystone of the position. We have constantly demanded that full freedom should be given to the teachers." The formal reasons of the Lords were "the rights of parents, the freedom of teachers, and the just treatment of denominational schools."

What the teachers themselves think may be, partly at least, inferred from the following resolutions adopted by the Executive of the N.U.T. on December 8 "in view of the debates in the House of Commons which commence on Monday" (December 10):—

That the Executive of the N.U.T. (1) deprecates the introduction of parents' committees in connexion with the management of public elementary schools as being quite unnecessary; but, if such committees are created, most strongly opposes placing in their hands any powers dealing with the appointment or dismissal of teachers either in an advisory or any other capacity. (2) Reaffirms the Union's position of supporting the abolition of all creed tests for teachers in public elementary schools, and most emphatically protests against the introduction, now and for the first time, of such tests for teachers in provided schools; it calls on His Majesty's Government to reject the Lords' amendment which creates them. (3) Being firmly convinced that, if the ordinary teachers of a school are allowed to give the denominational religious instruction, it will be impossible to secure the abolition of religious tests for teachers; strongly urges the Government to resist any amendment which will permit the teachers to volunteer their services for such instruction during ordinary school hours. (4) Most strongly condemns the reintroduction of privately managed schools into the public elementary education system in England and Wales, and urges His Majesty's Government to reject any proposal which will have the effect, under any circumstances, of allowing schools to receive public monies while they contract out of public control.

At the same time the constitutional position of the House of Lords is raised again. In withdrawing the Bill, the Prime Minister made the following emphatic declaration:—

It is plainly intolerable that a second chamber should while one party in the State is in power be its willing servant, and when that party has received unmistakable and emphatic condemnation by the country be able itself to neutralize and thwart and distort the policy which the electors have shown they approve. That is a state of things to which, for the nonce, we must submit. A settlement of this great question of education has been prevented, and for that calamity we know, and the country knows, on whom is the responsibility. But the resources of the British Constitution are not wholly exhausted. The resources of the House of Commons are not exhausted. And I say with conviction that a way must be found, and a way will be found, by which the will of the people, expressed through their elected representatives in this House, will be made to prevail.

Meantime there is the ominous suggestion of administrative difficulties. The Bishops of London and Southwark have issued an appeal, in which they say:

The London County Council has, on the whole, been patient and considerate, but now not a few of the poorer Church schools of London are in immediate danger of being closed. We have in the last twelve months spent upwards of £30,000 on sanitary and other repairs; but it was unreasonable to expect managers to spend large sums upon improvements of their buildings until it was seen what was to happen to them. A careful survey has been made, and we believe that with a central fund of £50,000 we could enable the managers of all our schools to bring them up to modern standards.

The National Passive Resistance Committee met on December 22, and issued a manifesto charging the destruction of the Education Bill upon "the Bishops, the temporal Peers, and their clerical allies," and making an impassioned appeal for public support. Among other things they say:

Hitherto we have not appealed to the public for personal and financial support. The Passive Resistance movement has been spontaneous; its energy is intrinsic personal conviction. Nearly 80,000 summonses have been reported to us, and many others have been issued which have not reached us, and 318 imprisonments have taken place. But now we appeal for immediate adhesion to our ranks and gifts to our funds. Every Free Churchman and Free Churchwoman should help. The hour is critical. Rally to the flag of liberty and conscience.

The House of Lords reversed the judgment of the Court of Appeal in Rex *v.* The County Council of the West Riding of Yorkshire. The law thus remains as previously understood: the obligation to "maintain" a public elementary school includes an obligation on the Local Education Authority to pay for religious instruction given in such school as part of the curriculum lawfully prescribed by the managers.

Mr. Birrell, in reply to Sir William Anson, stated that, under the Regulations of the Board of Education as to grants in aid of the cost of building and sites of training colleges, grants cannot be made for the building or purchase of hostels in connexion with existing colleges. The matter is receiving careful consideration as to how far it will be expedient to allow building grants in respect of hostels to be provided by Local Authorities for students in attendance at certain kinds of training colleges.

The Annual Conference of Head Masters of Public Schools was held at Malvern, the Rev. S. R. James (Malvern College) presiding. A resolution was adopted approving the establishment of the Public Schools Association in Canada as a means for promoting the interests of public-school boys who go out to the Dominion from this country. The attention of the Board of Education was called to the possibility of grave injustice to head masters in cases where a school is transferred to the Local Authority. Opinion favourable to the continuance of negotiations for the maintenance of the Teachers' Register was expressed. An animated discussion took place, on the motion of Mr. R. Fletcher (Marlborough), "that this Conference is of opinion that the system of Latin pronunciation recommended by the Classical Association should be adopted by all schools represented in Conference, with as little delay as possible." Dr. Gow (Westminster) stated that there was some reason to believe that the English pronunciation of Latin was first introduced at Westminster for a definite purpose. The Dean thought there had been a distinct decree in the time of Edward VI. that the Continental pronunciation should be abandoned in order that the people should not understand the Mass. From the time of Dryden the English pronunciation had been in use at Westminster. On a division the resolution was adopted by 32 votes to 11. It was also resolved, by 26 votes to 4, "that, in the interests of the general education of young boys, it is advisable that the study of Greek should be postponed to the age of thirteen or fourteen, and that Greek should not be a subject of entrance examination in schools represented on the Conference."

The Training College Association held their fifteenth annual general meeting at Westminster on December 18. The Rev. H. Wesley Dennis, M.A. (Battersea), President, said the training colleges would make best progress under a system of non-interference: the unsatisfactory relations with the Board of Education seriously hampered their work. Principal Sir Arthur Rücker delivered an address on "The Teacher and his Task," remarking the great change in the University towards education; and Miss C. Graveson, B.A. (Goldsmiths' College), and Dr. J. H. Cowham (Westminster) read papers on "The Conduct of the Criticism Lesson;" and Dr. E. Dale (Chester) a paper on "Scientific Method in the teaching of English Literature." There were interesting discussions on the papers.

The London County Council has decided to expend £37,500 in acquiring sites for secondary-school and training-college purposes in the districts of Clapham, Wandsworth, North London, and Tooting. The schools are considered to be needed for the scholars elected under the Council's new scholarship scheme. It is proposed to erect six schools on the sites, three for boys and three for girls, and to adapt as a training college a mansion at present standing on one of the sites. The cost of erecting the six schools will be about £160,000, and that of adapting the mansion £8,000. It is anticipated that four more schools will be needed to provide for the full number contemplated by the scholarship scheme. The total expenditure upon the Council's proposals with regard to secondary schools is estimated at £575,000.

The recently published annual report on the work of the Glasgow and West of Scotland Technical College supplies as an appendix a report on a visit to American educational institutions, presented to the governors by Mr. H. F. Stockdale, the Secretary and Director of the college. The subject of the Director's inquiry was especially the equipment of the engineering schools visited, with a view to the economical and judicious expenditure of the grants made to the engineering departments of the Glasgow College. Mr. Stockdale insists that the only points where the superiority of American schools must be admitted are those in which the weight of money turns the scale. The laboratory equipments are generally far more extensive and include more costly apparatus than is within the means of most British colleges. The environment of certain American institutions, such as that of the University of Wisconsin and of Cornell University, is also a great advantage. The Director was much impressed by the facilities in the States for the study of railway mechanical engineering, and he points out that this seems to be a field in which the Glasgow College might do good work. An Englishman in charge of a section of the metallurgical department of Columbia University stated that many British students proceed to the States to study metallurgy. Like other British visitors to America, the Scottish Director saw and heard with envy the large number of able men on the staff in nearly all the best colleges in the States, and noted that the heads of departments are allowed plenty of time for research.

The Teachers' Guild have issued a report of the Modern Language Courses held under their auspices at Tours, Honfleur, and Neuwied. The courses have again been very successful, the total number of students being 146, as against 130 in 1905. The special features of these courses are that they are limited to English-speaking persons, whose difficulties are often not the same as those of members of other nationalities; that an experienced representative of the Committee attends with the students; and that the students are distributed in very small groups among their hosts, so that they may have as full an opportunity as possible of learning conversationally the language of the country visited. There is evidently a steady demand for teaching organized on these principles. About thirty of the students held bursaries granted by Borough or County Authorities. Examinations were held at all three centres. Oral translation from English to French was introduced for the first time in the centre at Tours. We have already noted that courses will be held at the same three places as last year; and also at Santander, in Spain, if entries are received before July 1.

An influential deputation urged upon the Prime Minister (December 4) the urgent necessity for the organization and development of Oriental studies in London. They suggested that a Departmental Committee should be appointed to consider

(1) The present allocation of grants by Government Departments for instruction in Oriental languages; (2) in what way the general organization of a school for the teaching of Oriental languages in London would most advantageously proceed; (3) what funds and resources at present applied in London to the teaching of Oriental languages would be rendered immediately available for the establishment of such a school by the co-operation of existing agencies; (4) what additional funds from Government or other sources would be required for its establishment and maintenance, provision being

made in the first instance for the adequate remuneration of its teachers; (5) what recognition should be given by Government Departments to the knowledge of selected Oriental languages, as attested by approved certificates, diplomas, or degrees.

Lord Reay acted as spokesman, and Sir Henry Campbell-Bannerman, who was accompanied by the Chancellor of the Exchequer and the Secretary of State for India, returned a very favourable answer.

The Countess of Aberdeen, speaking at a meeting in connexion with the Rutland High School for Girls in Dublin (December 12), said the revolution which had taken place in the last fifty years in women's education and in their opportunities for education was very much like a fairy story. She was sure that the most enthusiastic of educational pioneers could scarcely have hoped for so much to be won in the face of great difficulties, including that most difficult thing to face, personal ridicule, and the risk of being called unwomanly and "blue stocking." All this was a thing of the past, and women, generally speaking, now had just as good opportunity of getting the best possible education as men. Oxford and Cambridge still held out, but perhaps they would not lag behind long. That old bogey of women's health being injured by systematic education at school and college had also broken down. She did not think that parents were troubled with that fear any longer, but realized that systematic development of the brain and intelligence was much more likely to tend to health than the more lax system of education at home. There was great and useful work for women in connexion with the Poor Law, and as health visitors, sanitary inspectors, and so forth. At present the demand was far greater than the supply.

The Westminster Play—this year the "Phormio" of Terence—proved a gratifying success. It was preceded by a topical prologue of encomiums for Westminster School and its recent benefactors, with mention of certain alumni lately deceased, and followed by an epilogue in the form of a short modern farce more or less on the lines of the "Phormio" itself, with very amusing topical allusions to the Soap Trust, New Spelling, and other interests of the moment. The acting was very good. Geta, which is the best part, was well represented by A. S. R. Macklin; A. P. Waterfield gave Phormio a certain sleek and meretricious air of astuteness that became him; and the Nausistrata of Mr. J. Benvenisti will remain one of the best possible presentations of the part.

One or two examples of the handling of matters of current interest:—

Nausistrata, getting no satisfactory reply from the politician Geta, declares man to be "varium et mutabile semper," for which she is promptly seized by a lictor and carried off to prison, "not, methinks, a victim of the first class."

There is an excellent passage where Chremes, a "truster" in soap, meets Dorio, a publisher. "The man who publishes books dear," says Dorio, "makes a pile of brass. I want your aid." "What sea knows not Aulus, or what land Canens, or what ocean, Corelli, knows not thy praise?" "Let us sell books cheap, both old and new, both those which the first and the second hand has touched. Let us fight together." "You will fight," slips in Phormio, "mobile bellum."

The Education Bill was not neglected:

Phaedria, an educationist, enters with Blue Book and "Obiter Dicta," and is promptly assailed by the Labour members. "It is not my doing," says Phaedria; "under my name Cambria and Macnamara lie hid." "You are pleased to be facetious," exclaims an angry Labour member, "and to make our schools (ludos) ludicrous. So great the evils which 'Birreligio' could arouse." Just then a Bill comes "ex alio loco" which Phaedria does not recognize, although assured that the emendations make it much better. "Can the people conciliate the Lords," Phaedria asks, "or the Lords the people"? "What good are the Lords?" asks Phormio; "in my opinion it is right to unlord the Lords. That's an *obiter dictum*." "Don't threaten, Phormio," says his leader, Geta; "if you only wait for me, the day shall soon come."

The revival of "A Midsummer Night's Dream" at the Adelphi has been a great artistic success, rivalling the best of pantomimes in scenic display and in exuberant fancy. The flyting of Helena and Hermia was delightful to the disinterested spectator outside the range of hostilities; Mr. Oscar Asche gave an excellent exposition of Bottom the Weaver; and Titania, Puck, and the company of fairies made charming diversion. A striking realization and a pleasant memory, especially for school folk.

UNIVERSITIES AND COLLEGES.

(*From our own Correspondent.*)

Cambridge. We are to have a grand field-day early in February, when the regulations for the amended Mathematical Tripos come up for adoption or rejection. The non-residents are being circularized at great cost, and the country parson will have another enjoyable trip to Cambridge. The whole affair seems rather remarkable; after the Senate has approved the general scheme of re-organization, the detailed rules for carrying out the changes are being opposed on principle. If the new rules are rejected, it will be obviously necessary to propose a fresh set of rules; and, if these are rejected, then *da capo*. There is no reasonable doubt that the Mathematical Tripos has suffered from the increasing competition caused by the popularity of the Natural Science and Mechanical Triposes. What is more to the point is the fact that a three years' course in Mathematics is only a prelude to professional success, while a candidate who has passed the Mechanical or Science Tripos is in a fair way to be a self-supporting institution. The other side of the picture has to be considered also: at the present time any presentable man who has taken decent Honours in the Mathematical Tripos is fairly certain of getting a good mastership at a large school.

Another change is proposed in our examinations: this time the Little-go is the victim. The compulsory paper in Greek and Latin grammar will in all probability be abolished. At present the form of this examination is about as unscientific as anything which could be devised. There are set books in each language, Latin and Greek, but the papers in these contain only passages for translation and questions on subject-matter, the grammar being reserved for a separate paper. The result of this arrangement is that the grammar paper becomes one of accidence only—dull, dry, and unprofitable; and the reading of the text is dissociated from any serious consideration of the structure of the language. If grammar and syntax questions are included in the set-subject paper, the work will undoubtedly be improved and much relief afforded to those who at present complain of the presence of Greek in the Little-go. It was the dull dry grammar paper which broke the heart of the serious student of science who had to take up Greek as a new language by way of preliminary to a university career. The substitution of French for Greek in a Little-go framed as at present would have been little help to the ordinary schoolboy: he would have found the intricacies of French grammar a far greater burden than those of the classical language.

The award of the Nobel Prize for Physics to Prof. J. J. Thomson is extremely popular in Cambridge. "J. J." has done much to found a school and to imbue it with his own enthusiasm. Like most other men of genius, the Nobel Prizeman is absolutely sympathetic with the most unpromising persons, and will help a beginner with as much care and courtesy as he will evolve a theory to amaze the *savants*. He is thoroughly unspoilt, and is as popular on the golf links at Royston as in his laboratory at Cambridge. They say he prefers "Westward Ho!" to Cambridge, and he has proved that he puts Cambridge before Chicago.

The presence of Sir E. J. Buchanan in England afforded the University an opportunity of granting an honorary degree to one whose duties during the late war were onerous, difficult, and unthankful. As President of the Treason Court the acting Chief Justice of the Cape had a thankless task, but he discharged his duties in a way which won for him nothing but approval. A straw shows how the wind blows. He was invited to preside at the final gathering of the South African football team before they sailed on their victorious expedition.

In this connexion it is curious to note the intimate association between South Africa and the universities. A third of the Oxford football team hailed from the Cape; Mr. Justice Buchanan's youngest son is one of the best cricketers in our eleven, if not in the whole county; while F. G. Hirsch, the brilliant three-quarter of the S.A. team, is a well known Cambridge man. It is also said that Marsburg, the full back, contemplates returning to England to join the sister university.

Our benefaction fund is growing apace. Since July, 1905, nearly £15,000 has come in, four-figure contributions appearing opposite the names of Lord Iveagh, Lord Rothschild, Lord Strathcona, and the Duke of Westminster. The Drapers' Company set a noble example with a gift of £5,000.

The special lists are now a thing of the past. Some names well known in sport appear in them: W. N. Potter, the golf blue,

in Class I. of Theology; R. C. Simpson, the late golf captain, in Law, in company with G. G. Koop, the Rugby three-quarter; A. G. Lyttelton, the President of the Hawks' Club, 1st Class in History; and J. G. Scoular, the Rugby full back, in Mechanical Science.

The Rugby match was a disappointment, but we were unlucky in losing Koop just before the contest.

No news so far as to the Mastership of Selwyn: it should be the stepping stone to a bishopric, not a place of retirement from episcopal labours.

In 1907 and following years the Senior, Junior, and Preliminary Cambridge Local Examinations will be held in July as well as December; the Higher Local Examination will continue to be held in June and December. In the regulations for 1907 (which may be obtained from Dr. Keynes, Syndicate Buildings, Cambridge) several important changes are announced. The Natural History of Animals has been introduced as a subject for Seniors and Juniors. Alternative syllabuses in Experimental Science may be offered by schools, and a wider choice of subjects is allowed to Juniors in English and to Seniors in Religious Knowledge and Geography.

The performance of the "Eumenides" in the original Greek, with Sir C. Villiers Stanford's music, and with gorgeous mounting, was a pronounced success, and was greatly appreciated.

London. Lord Davey has resigned his membership of the Senate. He has been a member since the reorganization of the University in 1900 as the representative of His Majesty in Council, by whom, both in 1900 and in 1905, the right of appointment was exercised by reason of the fact that at neither of those dates was the Faculty of Laws in existence. This body was constituted in June, 1905, and the appointment to the vacancy on the Senate will be made by them.

His Majesty in Council has approved the new Statutes made for the management of University College and for the constitution and management of the North London or University College Hospital and the School of Advanced Medical Studies connected therewith. All the arrangements made in connexion with the incorporation of University College in the University come into operation on January 1, 1907.

The Cobden Prize for the year 1906 has been divided between Mr. J. H. Higginson, private study, and Mr. M. F. Levey, B.Sc., Birkbeck College. A prize of the value of £10 and a silver medal have been granted to each. The subject of the essay was as follows:—"Does the Free Importation of Manufactures tend to displace Home Labour?"

London—King's College. At the annual court of the members of King's College, the Hon. W. F. D. Smith, M.P., in the chair, a marked improvement was reported in many directions. The number of students in all departments had increased from 5,145 to 6,897. Donations to the amount of £43,860 had been received, of which some £27,163 had been devoted to the payment of debt. The salaries of the professors had been increased, the accommodation in many departments, such as Chemistry and Physics, had been doubled, and new laboratories had been provided in Biology and Zoology. Among urgent needs of the College were mentioned improvement in equipment, the removal of the Strand School and Civil Service Department, so as to increase the accommodation, and the raising of a sum of £110,000 for enabling the incorporation with the University to take place. Sir John Gorst, Lord Glenesk, Dr. Liveing, Sir J. Wolfe Barry, Sir Thomas Raleigh, and Sir Charles Lyall were re-elected members of the Council. The agreement made by the Council with the Senate of the University for the incorporation of King's College in the University was provisionally approved.

Manchester. The Council reports that during the session 1905–6 there were 1,371 students entered at the University, of whom 35 entered as both science and medical students, as against 1,205 (of whom 47 entered as both science and medical students) in 1904–5. There were, in addition, 199 persons attending evening classes, besides 400 students attending lectures on railway economics and about 200 attending courses in law and economics at the Bankers' Institute. At the recent meeting of the University Court Sir William Mather referred to the general improvement and progress of the University, which he said was a living modern institution in the midst of a great progressive population requiring higher education, wider aspirations, and larger views of life. It was rising to the occasion all along the line, and was fully manned to encounter any difficulty which might confront it in the future. Dr. Casartelli, Bishop of Salford, Mrs. Elizabeth Anne Howarth, and Bishop Welldon, Dean of Manchester, were appointed members of the Court, in place of the late Dean of Manchester, Dr. Maclure, the late Sir R. C. Jebb, and the late Dr. Alfred Neild.

Bangor. On the advice of Sir Aston Webb, the Council of the University College of North Wales have accepted the plans of Mr. Henry T. Hare, of London (architect of Westminster College, Cambridge, and City Buildings, Oxford), for the new buildings of the College, which are to cost £200,000. Mr. Hare also wins the premium of £250 offered by the College.

Bristol. The University College enrolled during the past year 702 students—457 day students and 245 evening students; and there were 79 students in Medicine. Building extensions of the north wing have cost £440, and additions to laboratories, &c., £815; and altogether £1,400 has been spent upon the Medical School buildings during the past two years. The College has been greatly helped by an anonymous donor's gift of £1,000 a year for several years past.

THE EDUCATIONAL LADDER.

Oxford University.—Mr. Kenneth Fisher, B.A. Magdalen, has been elected to a Senior Demyship for three years at Magdalen College.—Charles Linnæus Cumming, of Rugby School, has been elected to a Natural Science scholarship at Trinity; H. B. Newsholme an honorary exhibitioner of Balliol in consideration of good work in natural science; Leslie St. Barbe Sladen to an exhibition in Hebrew at Wadham.

Ireland Craven Scholarships:—(1) George Robertson, exhibitioner of Balliol College, Ireland and Craven Scholar; (2) Arthur George Heath, scholar of New College, Craven Scholar; (3) Hugh McKinnon Wood, scholar of Balliol College (not eligible for Craven Scholarship, having obtained one in 1904); (4) Charles Graham Stone, exhibitioner of Balliol College, Craven Scholar; (5 and 6) *proxime accesserunt*—Daniel de Mendy Macmillan, scholar of Balliol College, and Leslie Whitaker Hunter, scholar of New College; (7) distinguished in the examination—George Macaulay Stevenson-Reece, scholar of Balliol College.

Mr. Leonard Fielding Nalder, commoner of Corpus Christi College, formerly of Rugby School, and Royal Asiatic Society's Public School Medallist for an essay in Indian history, has been elected to a modern history and modern languages scholarship at Corpus Christi College.

Cambridge University.—Clerk Maxwell Student: F. Horton, B.A., Fellow of St. John's.—Jeremie Septuagint Prizes: (1) Allan F. Gardiner, B.A. Jesus; (2) John H. Bentley, B.A. St. John's.—Carus Greek Testament Prizes: (1) for Bachelors, D. C. Woodhouse, B.A. Clare; (2) for undergraduates, W. R. Garrad, B.A. design. Clare. L. S. Thornton, Emmanuel, nearly equal.—The Whewell Scholarship: (1) not awarded; (2) W. D. Aston, B.A., LL.B. Downing.—The Maitland Prize: Leonard Alston, B.A. Christ's.—The Arnold Gerstenberg Studentship: A. E. Baker, Trinity, for an essay, "A Critical Examination of Descartes' Philosophy of Nature."—The Walsingham Medal: W. E. Agar and W. L. Balls.—Members' Prize for Latin Essay: Donald Struan Robertson, Scholar of Trinity.—Crosse Scholarship: John Kenneth Mozley, B.A. Pembroke.

The Clothworkers' Company have awarded exhibitions of £30 a year, tenable for three years by non-collegiate students, to H. Horton and H. Lee.

At Caius College a grant of £50, from the studentship fund, has been made to Mr. P. N. Ure, M.A., late scholar of the college, Assistant Lecturer in Classics at the University College, Cardiff, who proposes to proceed to Greece for archæological and historical research.

London University.—The degree of D.Sc. has been conferred on John William Nicholson (external student; private study) for a thesis on advanced subjects in Mathematics and Physics; and on Samuel Edward Shepherd and Charles Edward Kenneth Mees (internal students, University College) for theses on subjects of Photography.

During the session 1905–06 thirty-six students submitted essays in candidature for the University Extension "Sessional Certificate in Honours," as against sixteen in the previous session. Of these, 18 were successful, 2 being further awarded

medals offered by the Gilchrist Trustees; 12, although not reaching the high standard required for the Honours Certificate, were commended by the lecturers and examiners, while 6 were rejected. The names of the successful students and the titles of the essays approved and commended are given in the *London University Gazette* of December 5.

Marlborough College.—The foundation scholarships have beeu awarded as follows:—A. G. Ponsonby, J. B. Kirkpatrick, D. W. Brown, J. C. T. Leigh, J. F. Huntington, B. H. G. Shaw, L. A. Cattley, T. C. K. Moore, N. L. Hindley, A. B. Thompson, L. H. C. Hopkins, O. C. Constable, L. H. Bainbridge-Bell, J. V. Field, J. R. Philpott, G. S. Carter. Iudian scholarship, E. J. L. Warlow.

Wellington College.—The following elections to open scholarships are announced:—To a special classical scholarship, £80, B. E. Nicolls; to a scholarship on the modern side, £50, to which is added the Robert Henry Wentworth Hughes Scholarship, £15, H. R. Lupton; to a scholarship on the modern side, £30 (as ineligible for £50 scholarship), P. R. Hardinge; to scholarships on the modern side, £50, P. Grant and D. M. Thompson; to a scholarship on the classical side, £30, L. Lacey Smith; to scholarships ou the modern side, £30, G. H. Latham and R. L. Haggard.

Canterbury, King's School. — Junior King's Scholarships: C. J. Galpin, C. F. M. Ryan (for Mathematics), King's School.—Probationer King's Scholarships: R. E. Gordon (Mr. Douglas, Malvern Link), P. P. Cottrell (King's School), R. T. N. Norris (Juuior King's School), J. S. Hannah (Mr. Yule, Bedford), H. A. L. Ostrehan (St. Michael's College, Tenbury), A. H. Crowther (Kiug's School).—Entrance Scholarships: R. E. Gordon (Mr. Douglas, Malvern Link), D. Hussey (Mr. Vaughan Wilkes, Eastbourne), H. C. Powell, for Mathematics (Mr. Lee, Forest Row), E. A. Squire (Cathedral School, Oxford).—House Scholarships: H. A. L. Ostrehan (St. Michael's College, Tenbury), R. W. Whitall (Mr. Lloyd, Winchfield), J. W. D. Hyde (Miss Lord, Malvern).

CONFÉRENCES FRANÇAISES.

Société Nationale des Professeurs de Français en Angleterre.

ANDRE RIVOIRE.

M. L. Brandin, Fielden Professor of French, University College, London, nous a fait, le dernier samedi de novembre, une conférence sur "André Rivoire." L'œuvre d'André Rivoire, nous a-t-il dit, est déjà considérable. Elle comprend des comédies ("La peur de souffrir," "Il était une Bergère," "L'Ami du Ménage"), des articles de critique littéraire ("Albert Samain," "Alfred Capus"), et quatre recueils de vers—"Les Vierges" (1895), "Berthe aux grands pieds" (1899), "Le Songe de l'Amour" (1900) et "Le Chemin de l'Oubli" (1904). C'est de ces quatre derniers ouvrages qu'il s'agira uniquement dans la conférence.

"Les Vierges" étaient dédiées à M. Sully Prudhomme "en témoignage d'admiration profonde et de respectueuse gratitude." Elles se divisent en plusieurs séries: "Les Vierges à la nuit," "Les langueurs et paresses," "les extases, les légendes, les appels, les limbes." "Le poète," dit M. Rivoire, "s'est souvenu des vierges; il les a rêvées de toute sa solitude, éprises d'amour et de pitié, gardant leur cœur comme un autel, ouvrant leurs bras comme un refuge. Peu à peu elles lui sont apparues parmi des soirs mystérieux comme elles; son âme s'est peuplée de les sentir si proches et sa gratitude leur a voué ce livre."

Il nous représente en effet les sentiments délicats, puérils et charmants, innocents, mystiques et passionnés de celles dont le cœur s'ouvre à la vie, ou plutôt les sentiments que le cœur de M. Rivoire prête à la vierge. En voyant tomber la neige

Elle croit voir au loin éclos comme un grand lis
Monter un palais blanc parmi le crépuscule.

En coutemplant du haut de son balcon les roses et la verdure, un désir de vie pure monte jusqu'à elle:

Oh! vivre ainsi, s'écrie-t-elle, dans la fraîcheur des matins roses,
Vivre comme un lis pur, sans jamais se flétrir,
Sentir son rêve éclore et son âme fleurir
En un cadre éternel de verdure et de roses.

Ou bien le son du cor mélancolique et tendre fera frémir sa petite âme d'un désir inquiet d'une mort douce qui ressemblerait à un paisible sommeil. Elle a l'extase du souvenir, l'extase en Dieu, l'extase de l'amour; elle attend celui qu'elle doit aimer et qui doit l'aimer; et si celui qu'elle a rêvé n'est pas venu

. . . Elle vivra sans trouble et sans remord,
Elle ira pas à pas, jusqu'au seuil de la mort,
Le cœur divinisé d'extases éternelles.

C'est ainsi, d'ailleurs, que les légendes nous représentent les vierges—"La Vierge aux yeux d'or," "La Vierge qui d'un baiser ouvre les yeux de l'aveugle aux étoiles," "La Belle au bois dormant," "La Vierge des Vierges." A cette série de légendes concernant les vierges se rattache immédiatement la légende de "Berthe aux grauds pieds," que l'auteur a fait paraître à part et qui clôt la première partie de son œuvre.

Dans "Le Songe de l'Amour" et dans "Le Chemin de l'Oubli," il nous retrace tour à tour les impressions d'un cœur qui croit à l'amour et qui ne tarde pas à être désabusé. Il analyse ses sentiments avec la plus grande sincérité et montre toute la naïveté d'une âme à la fois sceptique et très sentimentale:

Je veux qu'à votre insu mon regard vous caresse,
Qu'autour de vous, sur vous, il se pose léger,
Donnant toute sa joie et voilant sa détresse,
Epris d'être docile et non d'interroger.

Enfin las de l'amour que son cœur compliqué ne peut accepter, il ne trouve de refuge que dans le retour à la maison natale où

Son passé lui apparait comme une offense
A tout ce qui survit en lui de son enfance.
Et dit-il: Je me sens repris par toute la douceur
De retrouver en moi, fidèle, mon vrai cœur.

L'originalité du poète est dans ce qu'ou pourrait appeler le *lyrisme psychologique*. Il exprime en vers harmonieux et toujours très clairs et très sincères les impressions les plus variées dont vibre son cœur de poète au contact de la réalité: elle a flétri à jamais son rêve; il sait qu'il est impossible de le ressusciter, et, découragé, il ne peut que le laisser disparaître à jamais. En terminant, le conférencier montre l'influence exercée par Sully Prudhomme, Paul Bourget, et quelques psychologues contemporains sur la poésie d'André Rivoire qu'au point de vue purement poétique il considère comme le premier des jeunes poètes que compte la France.

MEETING OF THE COUNCIL OF THE COLLEGE OF PRECEPTORS.

A meeting of the Council was held at the College, Bloomsbury Square, on December 15. Present: Mr. E. A. Butler, Vice-President, in the chair; Dr. Armitage-Smith, Mr. Barlet, Rev. J. B. Blomfield, Mr. Charles, Miss Crookshank, Mr. Eve, Mr. Hawe, Mr. Kelland, Dr. Maples, Mr. Millar Inglis, Dr. Moody, Mr. Starbuck, and Prof. Foster Watson.

The minutes of the last meeting were read and confirmed.

The Secretary reported that the Certificate and Lower Forms Examinations had been held on December 4–8 at 203 centres. The number of entries was about 7,450. For the Christmas Examination of Teachers for the College Diplomas to be held the first week in January the number of entries was 630.

It was resolved to accept the proposal of the Education Board of the Colony of Grenada to examine candidates for teacherships in their schools in the subjects of school management, &c.

He reported that the Autumn Course of 28 Lectures on the Practice of Teaching was completed on December 13. The number of students who had attended one or more sections of the course was 65.

Saturday, January 26, was fixed as the date of the next Ordinary General Meeting of the members of the College. It was decided that arrangements should be made for a dinner to take place after the meeting.

The report of the Examination Committee on the qualifications of the Rev. G. C. Bell and Mr. F. Storr, who had been nominated for the Fellowship of the College *honoris causa*, was adopted.

The representatives of the College on the Federal Council of Secondary School Associations submitted a report of the proceedings at a meeting of the Federal Council held on November 28. (The resolutions passed at the meeting are given on page 24.)

The draft Report of the Council to the General Meeting was considered, and was referred to the President, Vice-Presidents, and Dean for final revision.

The following persons were elected members of the College:—

Prof. J. W. Adamson, B.A. Lond., 24 Countess Road, N.W.
Mr. J. A. Broadhead, B.Sc. Vict., L.C.P., Cliffe House, Surrey Street, Batley.
Mr. A. Leal, L.C.P., 7 St. Paul's Close, Walsall.
Mr. A. E. Roberts, M.A. Camb., A.C.P., 198 Upland Road, Dulwich, S.E.

The following books had been presented to the Library since the last meeting of the Council:—

By the Author.—Bevan's Hints for the Better Organization of Sunday Schools.

By Mr. Eve.—Secondary Education (Scotland): Reports for the years 1902–6.

By the Volta Bureau, Washington.—U.S. Census Report, relating to the Blind and Deaf, 1900; How Helen Keller was taught Speech; Hitz's Helen Keller.

By E. Arnold.—Connolly's Dickens's Tale of Two Cities; Stobart's The Dryden Epoch; Wimberley's Scott's Ivanhoe.

By the Cambridge University Press.—Gaye's Scott's Talisman; Mercer's Trigonometry for Beginners; Murison's Goldsmith's Traveller and Deserted Village.

By Macmillan & Co.—Siepmann's Freytag's Die Ahnen (Part I., Ingo), and Word- and Phrase-book to the same.

By J. Murray.—Kirkpatrick's Colonization and Empire; Stride's Empire Builders; Wyld's Historical Study of the Mother Tongue, and The Place of the Mother Tongue in National Education.

By C. Philip & Son.—Swannell's Rafia Work.

Calendars of Aberdeen University, City of London College, Trinity College of Music, and Transvaal University College.

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The First Course of Lectures (Thirty-fifth Annual Series) will commence on Thursday, February 14th, at 7 p.m.

The Course is meant to meet the needs of teachers who wish to improve their acquaintance with what underlies the principles of their profession, whether they have any examination in view or not. The lecturer will treat his subject in such a way as to fit in with the requirements of the College in connection with the examinations for the Associateship, the Licentiateship, and the Fellowship. The reading of the students will be guided, and problems set for their exercise. Every opportunity will be taken of making practical applications of psychological principles to the work of the class-room.

SYLLABUS.

I. (*Feb.* 14.) *The Data of Psychology:* Nature of consciousness general and individual: insulation of individual consciousness: resulting difficulties: the subjective and the objective: distinction between the self and the ego: advantage of educator as external influence: psychological data of education: nature of the soul: evolution of personality: interaction of personalities: self-realization as ultimate goal of education.

II. (*Feb.* 21.) *Nature of the Soul:* essential unity of the soul: various modes of being conscious: the so-called "faculties": dangers of hypostasis: distinction between soul and soul-content: education as a process of assimilation of and by the external world: apperception: knowledge as power: the turning of fact into faculty.

III. (*Feb* 28.) *The Perceptual:* the senses general and special: contribution sensation makes to knowledge: classification according to "the preferred sense": the training of the senses: distinction between sensation and perception: the mind's share in perception: meaning and limits of observation: the gaping point: rhythm of concentration and diffusion: the place of inference.

IV. (*March* 7.) *Ideas:* relation between conception and perception: the active and the passive view of ideas: presented content and presentative activity: temporary and permanent changes in presentative activity: the place of definition in relation to ideas: degrees of generality of ideas: transitive and intransitive elements of thought: the grouping and interaction of ideas: mediate and immediate recall.

V. (*March* 14.) *Association and Habit:* a general principle of organic development not limited to ideas: relation to habits: place and value of habits in education: Fichte's "to form habits is to fail": accommodation, correlation, and co-ordination: recognized laws of the association of ideas: the continuum of common interest: redintegration: convergent and divergent association.

VI. (*March* 21.) *Memory:* fundamental nature: not limited to intellectual process: personal identity: predominance of the purposive element in memory: question of the possibility of improving the quality of memory: mnemonics and the educational applications: learning by rote: reminiscence and recollection: "verbal" "pictorial" and "rational" memory: memory and reality.

VII. (*April* 18.) *Imagination:* distinction from memory and thinking: limitations imposed by "picture thinking": so-called "kinds" of imagination differentiated by the number and kinds of conditions that limit its exercise: importance of clearly imaged ends in practical life: function of the imagination in Geography and History: its æsthetic use: nature and moral value of ideals.

VIII. (*April* 25.) *Interest and Attention:* nature of each: interaction between them, each in turn the cause of the other: interest as means and as end: relation between the interesting and the easy: attention as voluntary, non-voluntary, and spontaneous: place of each kind in educational process: mechanism of attention: its rhythm: its duration.

IX. (*May* 2.) *Thinking:* fundamentally an adaptation of means to ends on the ideational plane: the purposive aspect of apperception: thought and language: constant element in thought: laws of thought as thought: the dynamic basis of all thinking: nature and source of errors in thinking: the place and function of syllogistic and other formal modes of thinking.

X. (*May* 9.) *Temperament and Character:* nature of temperament: ancient and modern classifications of temperaments: physical characteristics of the temperaments: permanency of temperaments and means by which they may be modified: relation between temperament and character: classification of character-types: the advantages and dangers of such classifications in education.

XI. (*May* 16.) *The Emotions:* unreasonable depreciation of the emotions by certain philosophers: value of emotions as support of intellectual process: classification of the emotions: expression of the emotions: Lange-James theory of relation between emotion and its expression: important educational bearings of this theory.

XII. (*May* 23.) *Will and Desire:* relation of desire to feeling and to will: nature and function of motive: theory of the "strongest motive": the motiveless will: practical aspects of the theory of the freedom of the will: the development of the will: subjective and objective aspects: possibility of training the will.

The Fee for the Course of Twelve Lectures is Half-a-Guinea.

*** The Lectures will be delivered on Thursday Evenings, at 7 o'clock, at the College, Bloomsbury Square, W.C.—Members of the College have free admission to the Course.

C. R. HODGSON, B.A., *Secretary.*

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CURRENT EVENTS.

Fixtures.

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* * *

THE Teachers' Guild will hold a Conference at the College of Preceptors on January 11 and 12. Admission tickets—free to members of the Guild and its allied societies, and also to members of the College of Preceptors—from the General Secretary, Teachers' Guild, 74 Gower Street, W.C.

* * *

THE Annual Meeting of the Geographical Association will be held at the London School of Economics (Clare Market, W.C.) on January 4, at 4.45 p.m.

* * *

MONS. A. NOBLET will deliver a lecture on "Barbey D'Aurevilly—Le Chevalier des Touches," to the Société Nationale des Professeurs de Français en Angleterre at the College of Preceptors on Saturday, February 23, at 4 p.m.

* * *

THE following Courses of Lectures for Teachers have been arranged, among others, at University College, London, in conjunction with the Education Committee of the London County Council:—"The Teaching of Geography to Children," Prof. Lyde; "Some Types of Vegetation and the Conditions under which they exist," Dr. Fritsch (both courses beginning on January 17); and "The Principles of Electrical Science during the past 150 Years," Prof. Trouton, beginning on January 19.

* * *

THE Annual General Meeting of the Incorporated Association of Assistant Masters in Secondary Schools will be held at Westminster School on January 11.

* * *

THE twenty-second Annual Conference of the Incorporated Society of Musicians will be held at Buxton during the first week of January.

* * *

THE First Exhibition of the International Art Gallery, which was opened on December 12 (14 King William Street, Trafalgar Square), will run to January 5.

* * *

THE O.U.D.S. will present "The Taming of the Shrew" on February 6–12. Miss Lily Brayton (Mrs. Oscar Asche) will be Katherina, and Miss Agnes Brayton Bianca. *Matinées* on February 9 and 11.

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A SUMMER SCHOOL, under the auspices of the National Council of the Evangelical Free Churches, will be held at Cambridge early in August.

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A "FEDERAL CONFERENCE ON EDUCATION" will be held under the auspices of the League of the Empire, May 24 to June 1.

Honours.

The Nobel Prizes have been awarded to Prof. Henri Moissan, Paris (Chemistry); Prof. J. J. Thomson, Cambridge (Physics); Prof. Golgi, Pavia, and Prof. Ramón y Cazal, Madrid (Medicine); and Giosue Carducci (Literature). The Peace Prize was awarded to President Roosevelt.

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The University of Cambridge has conferred the honorary degree of LL.D. upon Sir E. J. Buchanan, Judge of the Supreme Court of Cape Colony.

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The University of Wales has conferred the following honorary degrees:—D.D., Rev. A. M. Fairbairn, Principal of Mansfield College, Oxford; D. Litt., Sir Lewis Morris; M.A., Mr. Tom John, ex-President of the N.U.T., and the Rev. Howell Elvet Lewis.

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Oxford University has conferred the honorary degree of M.A. upon Dr. Hermann G. Fiedler, Taylorian Lecturer in Old and Middle High German and German Philology, and Professor of German in the University of Birmingham.

Endowments and Benefactions.

Mr. Andrew Carnegie has made a donation to the Paris University yielding 12,500 francs (£500) a year, to be devoted to scholarships for scientists carrying on research in the laboratory of Mme. Curie.

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The Vice-Chancellor of the University of Cambridge announces recent contributions to the Benefaction Fund:—£5,000 from the Goldsmiths' Company to the Library; £2,500, part of the sum received in response to the appeal on behalf of the Library; £1,600, resulting from the General Appeal of the Cambridge University Association to general University purposes; £904 for the Building Fund for the new Museum of Archæology and Ethnology. Also subscriptions of £12,325 (including £5,000 from the Drapers' Company, and £1,000 each from six individual contributors) towards the Building Fund of the Department of Agriculture.

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The Right Hon. J. A. Campbell has given £500 to Glasgow University (as well as to Aberdeen University) for a students' recreation ground, in acknowledgment of the honour of being its Parliamentary representative for twenty-six years.

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Glasgow University has also received £6,500 from Mr. John S. Dixon, to raise the Lecturership in Mining to the status of a Chair; and £5,000 from the Graham Young trustees towards the endowment of a Lectureship in Metallurgical Chemistry.

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The trustees of the late Mr. T. Graham Young have presented to the Glasgow and West of Scotland Technical College £10,000 for the teaching of dyeing and bleaching in connexion with the Chair of Technical Chemistry. They have also voted a sum of £850 for the equipment of the laboratory for the chair.

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It is proposed to raise £10,000 among Aberdeen graduates to found a chair in the University of Aberdeen by way of marking their appreciation of their *alma mater*.

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The Rev. Alexander Harper, M.A., Wishaw, has presented to the University of Aberdeen a fine collection of precious stones "in memorial recognition of the scientific eminence, personal worth, and perennial influence of James Nicol, Professor of Natural History, 1853–78"; and Mr. Alexander M. Insch, Peterhead, a selection of flint casts of cretaceous fossils from Aberdeenshire.

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Prof. Schuster has given a rich collection of ancient Babylonian documents to the Manchester School of Oriental Studies.

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The Council of Liverpool University have accepted offers from Sir John Brunner, Bart., M.P., to endow a Chair of Egyptology, and from Mr. John Rankin to increase the endowment already provided by him for a Lectureship on the Methods and Practice of Archæology to the amount of a professorial endowment.

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Mr. James Roberts, of Saltaire, has offered £1,000 to the University of Leeds, provided £15,000 be subscribed in Bradford by March 1.

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Miss Dorothea Beale has left the residue of her estate—say £55,000—to the Cheltenham Ladies' College. Also to St. Hilda's Incorporated College £1,000, together with certain furniture and pictures; and to the Cheltenham Ladies' College Guild Settlement in London £500.

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Mr. Grant, Pitcorthie House, Fife, has given £10,000 towards the new Municipal Art School, Edinburgh. The Education Department makes a grant of £40,000; and the Edinburgh Town Council provides a free site and £15,000.

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"An Old Harrovian" has given £300 to the Harrow School workshop.

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Mrs. Russell Sage has given £50,000 to the University of New York.

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The Canadian Railway Club has founded a scholarship of £40 a year for four years in the Railway course at McGill University, Montreal.

Scholarships and Prizes.

Scholarships or exhibitions are offered at Oxford for Classics at University, Oriel, and Christ Church (January 8), at Jesus (January 15), and at Exeter and Brasenose (March 5); in Mathematics at Jesus (January 15), and at Magdalen, Brasenose, Christ Church, Pembroke, and Worcester (March 5); in Natural Science at Jesus (January 15), at Keble (March 12), and at Merton and New (March 19); and in History at Merton and Brasenose (January 11), Jesus (January 15), and Exeter (March 19).

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At Cambridge, six Stewart of Rannoch Scholarships, £25 a year each for three years, will be offered in May to natives of the counties of Wilts, Somerset, and Gloucester (including the city and county of Bristol)—two for Hebrew (May 7), two for Greek and Latin (May 9), two for Sacred Music (May 14). Also two open scholarships in Hebrew and two open scholarships in Greek and Latin, at same examination. Candidates in Hebrew and in Greek and Latin must be under twenty-one, and candidates in Sacred Music under twenty-two, on January 1, 1907. Names and certificates of birth and character to be sent to the Registrary at least twenty-one days before examination commences.

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The examination for the Goldsmiths' Exhibitions to Cambridge will be held on April 24–6. Forms of application should be obtained from Sir Walter S. Prideaux, Goldsmiths' Hall, London, E.C., by February 28.

Royal Holloway College (University of London) offers five scholarships of £60 a year, five of £50 a year, and one of £35 a year, tenable for three years. Examination on June 24 (not March 18, as announced in the "University Calendar").

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St. John's Hall, Highbury (University of London), offers two entrance scholarships of £50 and two entrance exhibitions of £25 a year for two years to duly qualified candidates for Holy Orders under twenty-seven at date of examination. Apply by March 10.

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The Law Society offer 12 studentships, £50 a year each for three years, in July.

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One residential and one non-residential scholarship at Westminster School will be filled up on January 14–16. Particulars from the Bursar, Little Dean's Yard, Westminster.

Appointments and Vacancies

Sir Philip Magnus, M.P., has been appointed President of the Educational Science Section of the British Association for the Leicester meeting this year. The other Presidents of Sections are:—

Mathematical and Physical Science—Dr. A. E. H. Love, Sedleian Professor of Natural Philosophy, Oxford University; Chemistry—Prof. A. Smithells, Professor of Chemistry in the University of Leeds; Geology—Dr. J. W. Gregory, Professor of Geology in Glasgow University; Zoology—Dr. W. E. Hoyle, Keeper of Museum in Victoria University, Manchester; Geography—Mr. George G. Chisholm; Economic Science and Statistics—Prof. W. J. Ashley, Dean of Faculty of Commerce in Birmingham University; Engineering—Prof. Silvanus Thompson; Anthropology—Mr. D. G. Hogarth; Physiology—Dr. A. D. Waller, Director of the Physiological Laboratory in London University; Botany—Dr. J. B. Farmer, Professor of Botany in the Royal College of Science.

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The Downing Professorship of the Laws of England in Cambridge University is vacant through the lamented death of Prof. F. W. Maitland, LL.D., F.B.A.

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Major P. G. Craigie, C.B., has been appointed Gilbey Lecturer on the History of the Economics of Agriculture at Cambridge for 1907–9.

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Mr. A. G. Tansley, M.A. Cantab., Assistant Professor of Botany, University College, London, has been appointed Lecturer in Botany at Cambridge, in succession to Mr. (now Professor) A. C. Seward.

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The Principalship of Westminster College, Cambridge, will be vacant in June through the resignation of the Rev. Dr. J. Oswald Dykes. New Professors of Dogmatic Theology and of the New Testament are also to be then appointed.

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Dr. W. A. Raleigh, Professor of English Literature at Oxford, has been appointed Leslie Stephen Lecturer at Cambridge for 1906–7. The lecture will be delivered in the Lent term.

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At King's College, London, Mr. H. de Sadow Pittard, M.A., Ph.D., has been appointed Assistant Lecturer in Mathematics; and Mr. A. W. Sikes, D.Sc., M.D., F.R.C.S., Demonstrator in Physiology.

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At Liverpool University Dr. H. E. Annett has been appointed Professor of Comparative Pathology; Dr. R. J. M. Buchanan, M.D. Liv., M.R.C.P., Lecturer in Forensic Medicine; and Dr. H. E. Roaf, M.D. Tor., Demonstrator and Assistant Lecturer in Physiology; Miss S. Melhuish, M.A., Lecturer in Education and Mistress of Method; Bernard Pares, M.A., Reader in Modern Russian History; Henry J. Watt, M.A., Ph.D., Lecturer in Experimental Psychology; G. R. Mair, M.A., Assistant Lecturer in Latin; and Miss Dora Mason, Girton College, temporary Assistant Lecturer in Greek and Latin.

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Prof. L. C. Miall, D.Sc., F.R.S., will retire from the Chair of Botany in the University of Leeds in June, after thirty-one years' service.

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At Bangor University College, Miss Jean K. Boyland, M.A. Edin., has been appointed Assistant Lecturer in Education and Tutor to the Women Students of the Day Training Department; and Mr. F. Fletcher, B.A., formerly Lecturer at Hartley College, Southampton, Assistant Lecturer in the Department of Philosophy and Education.

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Mr. A. W. Andrews, M.A., F.R.G.S., has been appointed to the new Lectureship in Geography at University College, Aberystwyth.

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Applications for the Professorship of Agriculture in the University College of Wales, Aberystwyth, must be lodged by January 19.

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Mr. R. A. Rye, formerly Librarian to Mr. F. D. Mocatta, has been appointed Goldsmiths' Librarian of the University of London, in succession to Mr. L. W. Haward, M.A., resigned.

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The Librarianship of the University of Sheffield is also vacant.

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Mr. John J. Welch, Manager of the Ship-building Department of Messrs. Cammell, Laird, & Co., has been appointed to the new Chair of Naval Architecture in Armstrong College, Newcastle-on-Tyne.

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Mr. R. K. Evans, Merton and Mansfield, Oxford, has been appointed Tutor and Lecturer in the New Testament at Mansfield College.

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The Professorship of Pure and Applied Mathematics in the University of Otago is vacant. Particulars and forms of application from the High Commissioner for New Zealand, 13 Victoria Street, London, S.W.

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Prof. Takakuju, a graduate of both English and German universities and an accomplished Sanskrit scholar, has been appointed Principal of the College of Foreign Languages, Tokyo.

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Mr. J. G. Legge has been appointed Director of Education at Liverpool.

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Mr. Donald M'Leod, M.A., Rector of Hamilton Academy, has been appointed Director of Studies to the Glasgow Committee for the Training of Teachers; and Mr. George Smith, M.A., Rector of the United Free Church Training College, Aberdeen, Director of Studies to the Aberdeen Provincial Committee.

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Mr. W. Stewart, M.A., D.Sc., Junior Inspector of Schools

in Scotland, has been promoted Inspector; and Mr. S. F. H. Mackay, M.A., Ph.D., has been appointed a Junior Inspector.

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Miss Mabel F. Vernon Harcourt, M.A. Dub., assistant mistress, Notting Hill High School for Girls, has been appointed Lady Principal of the new High School for Girls at Chelmsford, to be opened in spring.

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Miss Ellen Louisa Melville, M.A., has been appointed Principal of the Cleethorpes P.-T. Centre; and Miss Gladys Elsie Thomas, B.A., assistant.

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Miss M. Young, second mistress, North London Collegiate School for Girls, has been appointed Head Mistress of Aske's Hatcham Girls' School.

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Mr. James Hewetson, M.A. Oxon., of Southsea, has been appointed Head Master of Gainsborough Grammar School, in succession to the Rev. R. J. Elliott, preferred to the living of North Carlton.

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Mr. Philip Algernon Fryer, M.A. Cantab., assistant master, has been promoted Head Master, of Wellingborough Grammar School, in succession to Dr. Platt.

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The Rev. Thomas L. Carpenter, B.A. Lond., curate of St. Paul's, Forebridge, Stafford, has been appointed an assistant master at Ludlow Grammar School.

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Mr. H. O. Owens, assistant master, Salt Schools, Shipley, has been appointed to the Grammar School, Ashton-in-Makerfield; Mr. S. B. Hartley and Mr. J. Matruchot, to Manchester Grammar School; Mr. S. A. Macdowall, to Winchester College; and Mr. O. G. Gow, to Cranbrook School.

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The Rev. M. L. Man, M.A. Cantab., has been appointed Chaplain and assistant master at Dover College.

Literary Items. Mr. Fisher Unwin is publishing, in thirteen volumes, a new edition of Shakespeare's complete works, reprinted from the First Folio, with additions (between brackets) from the Quartos, &c. Prof. Churton Collins furnishes a general introduction; and there are introductory notes to the several plays, and a glossary.

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Mr. Murray has in the press a new series of books on English literature, dealing with the subject somewhat in the manner in which Mr. Mackail deals with Latin literature and Mr. J. R. Green and Mr. C. R. L. Fletcher with English history—such books as may be read with pleasure by all intelligent people, although primarily intended for educational purposes. The first volume deals with the sixteenth and early part of the seventeenth century, and will be accompanied by three graduated volumes of extracts, each complete in itself and designed for upper, middle, and lower classes in schools respectively. The authors are Mr. E. W. Edmunds, M.A., of Luton Secondary School, and Mr. Frank Spooner, B.A., Director of Education for Bedfordshire.

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Messrs. Ralph, Holland, & Co. promise shortly the first volume of "Hayward's Educational Science Series"—an exposition of modern educational theory in three books, by Dr. F. H. Hayward, D.Lit., M.A., B.Sc., L.C.C. Inspector of Schools. Book I. will be "A Study of Herbart, for Teachers and Others"; Book II., "General Principles of Education"; Book III., "The Primary Curriculum."

The Moral Instruction League is compiling a volume in which it hopes to embody considerable material in the form of accounts by teachers in public elementary schools of what is actually being now done by them in the direction of moral instruction, either by direct or by indirect methods of teaching. The League invites teachers to send to the Secretary (19 Buckingham Street, Strand, W.C.) accounts of their practical experiences as to subjects and methods. Suggestions and information as to suitable songs for children, suitable pictures for the walls of schoolrooms, and the beautifying of the school generally would be especially welcomed.

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Prof. Turner, of Oxford, writes a very instructive and agreeable article in the January *Cornhill* on "Greenwich Time," partly historical, partly practical, and with special reference to the disturbing vicinity of the L.C.C. electric generating station. "Move Greenwich Observatory?" said one of the members of the Board of Visitors. "We should be lucky if it cost us less than a battleship!"

General. Dr. Edmond Warre, late Head Master of Eton, has been presented with an address album containing 1,400 autographs of Old Etonians, a replica of the Ladies' Henley Challenge Plate, and a cheque for £1,450 from Old Etonians.

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The name of the South-Eastern College, Ramsgate, has been changed to "St. Lawrence College."

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The Rhodes Scholars at Oxford—71 from British colonies, 79 from the United States, and 11 from Germany (in all 161)—are distributed among 20 colleges Many distinctions have been won by them during the past year.

THE FEDERAL COUNCIL OF SECONDARY SCHOOL ASSOCIATIONS.

The following resolutions were passed at the meeting of the Federal Council of Secondary School Associations held on November 28, 1906:—

1. "That, in view of the chaotic condition of the curricula of secondary schools, this Council is of opinion that the time has arrived to obtain an authoritative pronouncement on the whole question from a body of experts appointed for the purpose"; and

2. "That a Sub-Committee should be appointed hereafter to report upon the best means of attaining the purpose of the foregoing resolution (1)."

3. "That in the constitution of a Professional Council for the management of the Register all branches of secondary-school teachers should be represented"; and, further, "That the resolution be communicated at once to the Board of Education."

4. "That the Board of Education be urged to modify paragraph 33 of the Regulations for Secondary Schools, so that payment may be claimed for four successive years on account of any scholar, notwithstanding that such scholar has already earned a grant under par. 32 (*d*)."

5. After discussion of a motion "That this Council is of opinion that schools having classes below those taking the 'Course' should receive additional financial aid; such aid to depend on the efficiency of the preparatory course, and on the number of scholars receiving instruction," it was resolved:

6. "That Miss Gadesden and Mr. Greene be appointed as a Sub-Committee with instructions to recast the resolution for consideration by the Council at its next meeting."

7. "That the Council hereby requests the representatives of each body represented upon the Board (or, failing action on their part, the executive of each such body) to appoint one person to act upon a Sub-Committee with instructions to draw up a memorandum on the subject of salaries of assistant teachers in secondary schools, and report to the Council at its meeting in February next . . ."

8. "That to secure efficiency, especially by the adequate payment of assistant teachers, and to prevent unjust competition with efficient private schools, the Council thinks it necessary to limit far more narrowly than at present the provision of secondary education at unremunerative fees in endowed and rate-aided schools"; and, further,

9. "That the resolution (8) be communicated to the Board of Education and to Local Education Authorities."

SPELLING REFORM.

ADDRESS BY PRINCIPAL DONALDSON, LL.D.,
University of St. Andrews.

I HAVE chosen as the subject of my address one which has much occupied the public mind lately, and with which our Rector's name [Dr. Andrew Carnegie] is associated—Spelling Reform. It is a subject in which I have taken a deep interest during the whole of my educational career, and it is one which I think will interest you, and, therefore, I will explain the matter to you.

Saving of Time—Experiments.

When I was a student I had the pleasure and privilege of becoming acquainted with a man of great originality—Sheriff Watson, of Aberdeen. He was the founder of industrial schools. At an early period of his endeavours to deal with the young waifs and strays of society he gathered together a number of the roughest illiterate lads for the purpose of teaching them to read. He saw the difficulties of the ordinary method, and resolved to try to instruct them by a phonetic alphabet, that is, by an alphabet in which every letter represents only one sound. He told me the result of his experiment. He taught these rough lads to read in six months with greater facility and accuracy than he could have done in two years by the ordinary method. At the conclusion of the experiment he set before them books in the ordinary spelling, and they acquired the power of reading these in two or three weeks. Similar experiments were tried in various schools in England and Scotland, and always with the same results. Mr. Pitman framed a phonetic alphabet in company with Mr. Ellis, who was for a long time President of the Philological Society. Books were printed in this phonetic alphabet, and the experiment of teaching to read was tried with them. The results were recorded in pamphlets by Mr. Ellis and others. The subject was also taken up by Mr. Withers, who, in a series of letters on the spelling difficulty to the *School Board Chronicle*, showed how great were the impediments created by our present mode of spelling, and how they could easily be removed by an alphabet of forty letters, the additional letters being taken from letters already used in other languages, or mere modifications of those which are now in use. He collected the letters into a pamphlet, which contains a narrative of the experiments that were made with a phonetic alphabet. It is not necessary to go into details here. It is enough to say that the arguments and experiments received the sanction of the greatest philologists of the period. Max Müller devoted a chapter to the subject in his "Lectures on the Science of Language," and wrote an essay expressing strong approval of Mr. Pitman's efforts, and of the opinion that the use of a phonetic alphabet would be of the greatest benefit to the nation and to philology. In this essay he says: "It is, I believe, hardly necessary that I should prove how corrupt, effete, and utterly irrational the present system of spelling is; for no one seems inclined to deny all that. I shall only quote, therefore, the judgment of one man, the late Bishop Thirlwall—a man who never used exaggerated language. 'I look,' he says, 'upon the established system, if an accidental custom may be so called, as a mass of anomalies, the growth of ignorance and chance, equally repugnant to good taste and to common sense.'" You can easily conceive how difficult it is to teach a child to read by a system of symbols which confuse him at every step and mar his powers of accurate hearing. This has long been felt by intelligent teachers, and at the present day the child is not taught by means of our alphabet. In fact, the good teacher takes care not to mention to the pupils the names of the letters, but he asks them to look at words, tells them how each word is pronounced, and requests them to imitate him. By degrees he helps them to analyse the sounds and to discover them in other words which are placed before his eyes. This is what is called the "Look and say" system. In this way a good teacher can smooth the road to the mastery of reading, and make it less painful. But even with good teaching the process is painful. The slow child undergoes torture, and all the children have to face perplexities to which they should not be subjected. Our general conclusion, therefore, is that, according to circumstances, children and illiterates can learn to read by a phonetic alphabet in a quarter, a third, or a half of the time required when a non-phonetic alphabet is employed, and, as there are millions of children learning to read, the phonetic alphabet saves millions of hours of wasted labour and of irritating vexation.

Utility in Colonies and Dependencies.

In the second place, the phonetic alphabet would help much in our government of colonies and dependencies. It is of the utmost consequence that every citizen of the British Empire, whatever his native tongue may be, should learn English, and the great obstacle to learning English is removed when the words are spelt phonetically. In 1881–2 I accidentally came upon newspapers that circulated in Egypt, written in French, and containing wild assertions calculated to stir up hostility to Britain. The Egyptians no doubt believed the assertions because they were in print. On inquiry I found that there were no newspapers in English to contradict these assertions. The reason was that the Egyptians did not learn English. The spelling was a fatal obstacle. And possibly I should not be far wrong if I were to maintain that there would have been no bombardment of Alexandria if our alphabet had been phonetic.

Utility in Scholarship and Science.

In the third place, a peculiar difficulty has arisen in consequence of the variety of language now used for science, scholarship, and other departments of intellectual effort. There is activity in these subjects in all the principal countries of the world, and books are written on them in English, French, Italian, German, Dutch, Swedish, Danish, Spanish, Modern Greek, and Russian, and in other languages. It is advantageous for the scientific or scholarly man to know these books; but how can he? In a period not long distant most of these books would be written in Latin, but now there is no common language. The question, however, is raised whether one of the modern languages should not become the common vehicle of scholarly and scientific work, and at conferences on this question English has sometimes been pointed out as the language that can be most easily acquired and would be most serviceable. But this opinion is qualified by the condition that English should be spelt phonetically. The spelling is the great obstacle, and, indeed, it is regarded as an insuperable obstacle. But, if the phonetic method were adopted, all difficulties would be entirely removed, and English might easily become the common language.

Agreement on Phonetic Alphabet.

Now the question may be asked: How does it happen that, if these experiments were so successful, no action was taken upon them? The answer is simple. No action can be taken until there is something like an agreement as to what the phonetic alphabet should be, and until this alphabet can be introduced into all the public schools. It would be inexpedient that some schools should use one alphabet and others another, and it would also be inexpedient that some schools should be taught by a phonetic alphabet and the others by a non-phonetic alphabet. Now it is in the power of the Scotch Education Department to fix on one particular phonetic alphabet for Scotland, and to ordain that this alphabet shall be used in teaching children to read. The remarkable feature of the case is that everything is preparing the way for the Education Department to take these two steps. First, as to the agreement about a phonetic alphabet. At the present time every compiler of a dictionary frames a phonetic alphabet by which he can enable his readers to learn the exact pronunciation of the words. Dr. Murray, the editor of the great English Dictionary published by the Clarendon Press, has devoted special attention to this subject. He approved strongly the efforts made by Mr. Pitman, and he announces in clear language the principle which all philologists have adopted that the present pronunciation of a word "is the starting point of all investigation into its previous story," and therefore must be presented to the reader, not in the spelling which may be prevalent at this time, but in a phonetic spelling. He has, therefore, devised a phonetic alphabet which has so gained the approbation of scholars that it has been used in nearly all recent dictionaries. Then every work on phonetics must have a phonetic alphabet, and the alphabet which is in general use comes very near to that of Dr. Murray. Works on phonetics are now recommended because they are believed to be of great use in facilitating the acquisition of modern languages, and accordingly phonetic alphabets are pre-

pared for French and German as well as for English, and these alphabets also approach nearly to that of Dr. Murray. There has thus arisen a decided consensus of opinion as to what the phonetic alphabet should be, and the Education Department could therefore easily obtain a committee of men who could produce for it a satisfactory scheme.

Phonetics in the Schools.

There is also a strong motive which should induce the Education Department to call in the phonetic method to aid in the teaching of reading throughout all State-aided schools. The Department makes it obligatory on all students who are being trained to be teachers under it to study phonetics. In other words, every certificated teacher must have a familar acquaintance with a phonetic alphabet and must know how every sound in the English language is produced. Now, what can be the use of this knowledge? Plainly there can be no satisfactory use of it unless teaching to read by a phonetic alphabet is introduced into the schools. The Education Department will stultify itself in making the study of phonetics compulsory on teachers if it does not take this step. It would add greatly to the effectiveness of the movement if it were taken up by the Board of Education in England. As far as I know, this Board has not yet prescribed the study of phonetics to its teachers. But there is some prospect that it will do so shortly. At least a powerful appeal to it has been made by the Senatus of the London University. Our University has received a communication from the Principal of the University of London, stating that the Senate of that University proposes to present to the Board of Education a memorial to suggest that inquiries should be instituted by a Committee of Investigation with a view to arriving at some general agreement on the main principles underlying all voice and speech training; and asking the Senate of our University to co-operate in the matter and to give an expression of their views. There can be little doubt that such a committee would recommend the use of a phonetic alphabet, as indeed is indicated in the memorial to the University of London which has led the University to take this step.

No Serious Difficulty.

Of course, this use of a phonetic alphabet does not necessarily involve the employment of it in printing books. There would, no doubt, be a conflict between the two systems for some time. But the existence of both would cause no serious difficulty. The child who has learnt to read by the phonetic system can learn to read books in the present type within a week or two. Even now we do not generally read Shakespeare in words which follow his own spelling, for his spelling differed from ours in nearly every line; but without any teaching we have no difficulty in reading the text of the first folio edition of Shakespeare or any other English book of his day; and, in fact, we encounter no serious obstacles in mastering Chaucer. It is possible that a still greater change may become welcome to the British public. Revolutions in education take place slowly and quietly. Like the Kingdom of Heaven, they come without observation. Free education was passed with scarcely a murmur. Payment by results disappeared in the stealthiest manner. It is only when ecclesiastical questions are introduced that explosions occur. Now such a quiet revolution is taking place at the present moment.

A Rational Alphabet.

The symbols of all the alphabets which I have mentioned—Mr. Pitman's, Dr. Murray's, that of the International Phonetic Association, and that of Prof. Viëtor of Marburg—are arbitrary. They have no necessary connexion with the sounds which they indicate, but some time between 1840 and 1860 Mr. Alexander Melville Bell, whose father was a native of St. Andrews, elaborated a rational alphabet which he called "visible speech." The nature of this alphabet is that each symbol indicates how the sound is to be produced, and what are the organs to be used for this purpose. If you understand the symbol, you have simply to put the lips or tongue or other organs indicated into the position which the symbol directs you to put them, and you produce the sound. This is the first and only alphabet which indicates how the sound is produced, and it is allowed on all hands to be a marvellous invention. I had an opportunity of testing it at an early period of its existence. In 1859 Mr. Bell told me about it, and said that he would like to give me an illustration of its nature and powers. Accordingly he came to my house with his two sons, who were then pupils at the High School of Edinburgh. Mr. Bell, one of the sons, and myself remained in one room, and the other son, Alexander Graham Bell—who was afterwards to be the inventor of the telephone, photophone, and partial inventor of the gramophone—was taken to another room where he could not possibly hear any sounds that we might utter. Mr. Bell then asked me to utter any sounds that I liked, including even imitations of the cries of animals, such as the barking of a dog. I did so, and also dictated passages from Modern Greek and German which contained difficult sounds. He committed these to writing by his alphabet, and then his son Alexander came in. The writing was presented to him, and he reproduced every sound which I had dictated with almost the exactness of a gramophone. The uses of such an alphabet are manifold, but I may mention three. (1) It is invaluable for learning the pronunciation of any foreign language. The person who knows the alphabet can reproduce exactly the pronunciation of the writer of the words, and, if the writer speaks correctly, the reader will also speak correctly. (2) The use of the alphabet can prevent or cure stammering. (3) Deaf mutes can be enabled to speak by learning this alphabet.

Visible Speech.

"Visible Speech," or the "Science of Universal Alphabetics," was published in 1867. Philologists praised the book in glowing terms, and made it the foundation of the science of phonetics. But it attracted little attention from others. Mr. Bell offered the invention to the Government, but the Government refused to have anything to do with it, as not being within the sphere of their operations. The mass of the public took no interest in it at all. Mr. Bell was greatly disappointed, and did not push his invention. One great application of it was due to his son, A. Graham Bell. He saw the importance of it for teaching deaf mutes to speak, and tried various experiments in this direction. The experiments were completely successful. Deaf mutes, even of five years of age, acquired the power of speaking in a comparatively short time, and reproduced the sounds of words with accuracy and clearness. Mr. Graham Bell published an account of the experiments in a pamphlet entitled "Visible Speech as a means of communicating Articulation to Deaf Mutes" (Washington, 1872). "Visible speech" is now frequently employed in the instruction of deaf mutes. But the other applications have lagged behind. At the present time, however, a great change is taking place. The text-book of phonetics recommended to our students is Prof. Sweet's "Primer of Phonetics." Sweet is the highest living authority on phonetics. In his text-book he has adopted the symbols of "visible speech" with some slight modifications, and in this way the students of our universities will learn and become familiar with all the symbols, and will no doubt teach them to their pupils. Then Mr. Graham Bell has resolved, in memory of his father, who died recently, to prosecute the subject with great ardour and to extend the knowledge and applications of "visible speech." Energy will thus be thrown into the study of his father's system. It may take a long time to secure success for this system; but I think that Mr. Bell's alphabet is sure in the end to drive every other out of the field in every part of the world, for it is the only rational alphabet and possesses incalculable advantages. Children may take five or six weeks or even longer to master it, but the time is not lost. In learning it they acquire a practical knowledge of the mechanism and management of the voice, and their ears are trained to distinguish sounds accurately.

Objections stated and answered.

I have not noticed the objections that have been raised against the general adoption of a phonetic alphabet, although implicitly answers have been suggested. I shall now allude to the most weighty. First, it is said that such an alphabet would destroy the beauty of our printing, or, as it is sometimes put, of our language. The people have strange eyes that can see beauty in a system in which symbols continually lead astray and where there is no harmony between the symbol and the sound. The fact really is that these people cannot bear the idea of a change that would be troublesome to them. They are like the dogs who bark at all strangers. Second, the change would interfere with etymology. The people who urge this are dabblers in etymology. They are not and cannot be scientific philologists. The spelling is a small part in the history of a language. It is words as pronounced which the philologists are bound to consider. The objection might seem to have some force fifty years ago when philology was in its infancy, and was excusable in a writer like Trench, but Max Müller utterly refuted Trench. And Trench would have acknowledged this if he had lived to the present day and mastered results of the philology of the present age. All scientific philologists, as is well shown by Prof. Skeat, author of our best etymological dictionary, reject the objection as irrational and unscientific. Third, some fear that the use of a phonetic

alphabet will bring confusion into the pronunciation or spelling of our language. This fear shows ignorance. Spanish, Italian, and German have alphabets that are very near to phonetic alphabets, and yet their spelling has been less liable to change than ours. In the case of Spain the spelling has been fixed by the labours of an Academy. In Britain custom controls everything, but a standard does exist, and this standard is followed in all our great dictionaries, and is the guide of all who wish to spell correctly. The fear is absolutely groundless, and arises from a misapprehension of what determines the fortunes of a language.

REVIEWS.

THE MACEDONIAN QUESTION.

Les Bulgares et le Patriarche Œcuménique; ou, Comment le Patriarche traite les Bulgares. Par C. Bojan. (Paris: Librairie Générale de Droit et de Jurisprudence. Leipzig: Breitkopf et Haertel. Neuchâtel: Attinger Frères.)

The Patriarch of Constantinople communicated to the Porte and to the representatives of the Great Powers a Protest on the subject of recent events in Macedonia, signed by nineteen Metropolitan Bishops, and dated August 10, 1903. Upon this document a journal of Sofia, the *Tzerkoven Viestnik*, at once published a series of comments in reply, which have been translated into French and issued in the present volume for the information of Western students of affairs in the Near East. An historical sketch of considerable length is given by way of introduction, and a large array of illustrative facts, "drawn from the archives of the Holy Synod," is appended. These illustrations are confined to more recent occurrences, but "il y en a certainement de pareils en plus grande quantité dans la chancellerie de l'Exarchat." The Exarchate is the Bulgarian spiritual jurisdiction in Danubian Bulgaria, Thrace, and Macedonia, independent of the Constantinople Patriarchate, and established under a firman of 1870. The present situation is thus represented by M. Bojan:

Il y a en Thrace et en Macédoine une institution nationale bulgare, l'Exarchat, qui veille sur le bonheur et les progrès de la population bulgare. Cette mission ne convenant ni aux Turcs, ni aux Grecs et aux Serbes, l'Exarchat est devenu en butte à toutes les calomnies de ses adversaires; il ne se commet pas un crime dans la Turquie d'Europe sans que l'Exarchat n'en soit l'instigateur. En dehors de l'Exarchat, il y a en Turquie l'autorité de la Porte, les organes du Phanar et la propagande serbe, tous alliés contre l'élément bulgare de la Thrace et de la Macédoine. Ces alliés travaillent à une seule chose: détruire l'intelligence bulgare et le sentiment national de ce peuple, afin de le réduire en une pâte molle, dont ils se flattent de pouvoir faire ce qu'ils désirent. . . . Ils travaillent, en ce moment, à expulser de la Thrace et de la Macédoine tout Bulgare cultivé, et le résultat de ces efforts a été qu'aujourd'hui il y a en Bulgarie près de trois cent mille sujets ottomans qui mangent le pain de l'exil et qui ont les yeux tournés vers cette patrie, à laquelle les attachent tant de liens moraux et matériels. . . . Tous ont des parents, des propriétés, des intérêts dans cette Thrace et cette Macédoine dont Serbes, Grecs et Turcs les ont expulsés, sans pouvoir toutefois leur enlever l'espoir du retour. . . .

En 1903, il éclata une révolution formidable, durant laquelle on vit des évêques grecs conduire les bachibozouks et indiquer les villages qu'il fallait détruire et les habitants qu'il fallait massacrer. L'Europe s'émut alors: les Empereurs d'Autriche et de Russie élaborèrent un programme de réformes et les vilayets se calmèrent, la population ayant repris espoir. Il n'y eut de mécontents que le Palais, la Porte, Athènes et Belgrade. Il n'y avait pas de quoi! La seule différence entre 1902 et 1905, c'est qu'auparavant les Bulgares étaient persécutés sans témoins et qu'en ce moment ils le sont sous les yeux des officiers européens.

"Cette situation pourra-t-elle s'éterniser?" That really depends upon the Bulgarians themselves. They want Bulgaria to be treated like Crete. They ask for the removal of the heavy hand of the occupant of the palace of Yildiz.

It is unnecessary to follow in detail M. Bojan's drastic handling of the Metropolitans' Protest. One point will suffice. The Protest wants to make out that Macedonia is not Slave, but Greek. It says (pages 5, 6):

Non, à l'exception de quelques régions montagneuses du nord [dans la copie aux ambassadeurs est ajouté: "où la majorité de la population appartient à cette race" (slave)], la Macédoine n'est pas slave. Elle est habité, dans toute son étendue, par une nombreuse population turque, par une population grecque plus nombreuse encore, par des Albanais, par des Valaques et par des Bulgares orthodoxes. C'est ainsi que Grecs, Bulgares orthodoxes, Albanais et Valaques constituent un groupement compact. . . . La Macédoine n'est pas slave: elle pourrait bien le devenir, et il n'y aurait qu'à supprimer pour cela sa population turque et sa population grecque; il n'y aurait, en définitive, qu'à anéantir les trois quarts de ses habitants.

This statement is put more strongly in the copy presented to the Ambassadors. Thus:

Elle a une population compacte de Musulmans et de Grecs, qui forment plus que les trois quarts du nombre total de ses habitants; elle n'est donc pas exclusivement slave, mais bien turquo-grèco-bulgare, au point de vue de la composition actuelle de sa population.

The Greek text has the variant "turco-grèco-valaque." The Patriarchate, then, represents that Macedonia is more than three-parts Musulman and Greek; it makes the Musulmans less numerous than the Greeks; and it actually (in the Greek text, not in the other copies) joins orthodox Bulgarians and Wallachians with Greeks and Albanians to form "four *Hellenic* nationalities." We need not comment on the puerile suggestion that anybody argues that Macedonia is "exclusivement slave." To this M. Bojan replies (page 36):

Nous opposerons à ces sophismes et à ces théories tout artificielles quelques chiffres de la population chrétienne en Macédoine: 145,900 maisons bulgares, dont 101,500 exarchistes et 43,722 patriarchistes, 378 uniates et 300 maisons protestantes; 20,011 maisons grecques, 9,353 valaques, 1,006 albanaises, 1,437 tsiganes et 508 maisons *gagauzes* (gens de race turque, mais chrétienne de religion). Si cela devenait nécessaire, nous pourrions présenter une statistique détailée dressée soit par vilayets, soit par sandjaks, cazas et villages, soit par diocèses.

The bare exposition of Turkish methods of government amply explains the lamentable catalogue of distresses and disorders, horrible even to read. What can be the condition and the temper of a people with progressive instincts and impulses when their patriots are thrown into Turkish dungeons and "les écoles et les églises sont fermées et les prêtres et maîtres d'école chassés"? Take one example of ecclesiastical oppression out of thousands:

Le village de Prossotchen est composé de 300 familles exarchistes et 20 patriarchistes. Il possède deux églises, que le caïmakam de Drama a remises aux 20 dernières, tandis que les 300 autres familles sont privées d'églises depuis vingt-deux ans.

As for the schools, a Bulgarian candidate for the office of schoolmaster must obtain the licence of the local Commissioners of Public Instruction, established by the Porte in the vilayets, having first fortified himself with "un certificat d'honnêteté et de loyauté delivré par le conseil du caza et approuvé par le conseil du sandjak." He is milked dry at every stage—"on le saigne à blanc"—and delayed at the pleasure of his "examiners." If he changes from one vilayet to another, he has to go through the operations *de novo*. "Ces Commissions," says M. Bojan, "ont le droit de donner ou de refuser aux Communes l'autorisation d'ouvrir une école. Nous pourrions citer des centaines d'exemples de la façon dont elles exercent ce droit; un seul suffira: le quartier bulgare Pirghi de Salonique a dû lutter pendant quatre ans pour obtenir la permission d'installer une école."

It is a frightful picture from contemporary history. The details given by M. Bojan are so precise and pointed that his representations deserve study and examination. If they be true, it would be hard to say that they do not justify the extremity of reprisals.

"THE LAST HERO OF HELLENISM."

Julian the Apostate. By Gaetano Negri. Translated from the Second Italian Edition by the Duchess Litta-Visconti-Arese. With an Introduction by Prof. Pasquale Villari. In Two Volumes. Illustrated. (21s. net. T. Fisher Unwin.)

Notwithstanding the excellence of Miss Gardner's biography in the "Heroes of the Nations" series, and the fine indagations of Merejkowski's "The Death of the Gods," there is ample room for this congenial study of Negri's. Negri was intellectually rationalistic, but he frankly admitted the aspirations of hope; and he was absorbingly fascinated by "the great unbelievers who on their conversion became great apostles," and by "the great philosophers who had sought to make a religion of their philosophic creed." His interest in George Eliot was expressed in an elaborate study in two volumes, which he declared to be his master-work; but it is in the present volumes that Prof. Villari discerns "the finest fruits of his wide learning, original-

ity, and force of intellect." The facts of the life of Julian are substantially well ascertained; the essential interest lies in the psychological problem of his inner nature—a problem that appealed to Negri's intellect and sympathy with commanding force. "He lived, as it were, with Julian," says Prof. Villari, "breathed the same atmosphere, and so entirely identified himself with the Emperor's times that his readers are likewise transported to that ancient world. This is the secret of Negri's eloquence; this it is that constitutes the chief merit of his book."

Negri narrates the life of Julian in the first half of the first volume—"a cursory glance," he calls it. Then he commences the part of his task that really interested him. He examines the religious and philosophical environment of his hero—the discord among the Christians in "this disputatious century" (especially the course and issues of the great Arian controversy) and the principles and the influence of Neo-Platonism; and he gives a patient and luminous analysis of the influence of Neo-Platonism; and he gives a patient and luminous analysis of the influence of Neo-Platonic ideas upon Julian's mind, and of the manner in which Julian understood Christianity and combated it from the doctrinal point of view. This concludes the first volume. The second volume opens with a detailed account of Julian's action against Christianity—his acts and conduct as a restorer of polytheism as the religion of the State. Then comes the disillusion—"a sad disillusion, for which he had only himself to blame"; next, a long and penetrating consideration of "the sovereign and the man"; and, finally, a summary of conclusions. "Julian's attempt," Negri concludes, "is to be condemned from a philosophical and historical point of view."

But although this attempt was foolish and destined to perish, if it reveals a strange lack of foresight in him who promoted it, if we smile at the transport of mystical superstition in a man who pretended to oppose Christianity, and smile no less over the illusions of this thinker who did not perceive that he revolved in the same circle of thought as his enemy, if we reprove the intellectual prejudices that did not permit him to discover under the corruption of Christianity the vivifying principle that Christianity presented to the world, we cannot exclude from our souls an intense sympathy for the man who, disappearing from the world at such an early age, still left in his actions an admirable example of heroism, enthusiasm, and faith, who sacrificed his fortune and the immense power he had conquered to one idea, who, poet and soldier, fearless of all consequences, persecuted in the early years of his life, then raised to the summit of glory and power, seldom permitted the serenity of his thoughts and will to be disturbed, and ever kept before him the idea that was the guiding star of his existence.

But the value of the work lies in the working out of the details of each aspect of Julian's life and career. The author holds firmly to his "purely objective" aim. "I do not entertain any prejudice for or against him. I have simply sought to understand him, to scrutinize the motives that impelled him to his insane attempt, to recreate the *milieu* which surrounded him, while examining the world in which he lived, and considering the atmosphere of prejudice in which he had been educated." There are two portraits of Julian—one after the bust on Acerenza Cathedral, the other from a sardonyx intaglio (Paris)—two plates of coins, and three other illustrations, as well as a portrait of Negri. A very able, fair-minded, and instructive work.

GENERAL NOTICES.

CLASSICS.

Aristotle: De Sensu and De Memoria. By G. R. T. Ross, D.Phil. Edin. (9s. net. Cambridge University Press.)

Dr. Ross sets out on opposite pages the Greek text and a translation in English, vigorous, free, thoroughly studied, and accurately representing the original. The text substantially follows the excellent edition by the late W. Biehl in the Teubner series. The translation will be welcomed especially by students of philosophy whose Greek does not enable them to cope with the original text. In the commentary Dr. Ross has "tried not only to give such explanations of ordinary words and expressions as a student not yet versed in the Aristotelian philosophy will find useful, but to contribute an adequate elucidation of the undoubted difficulties which continually arise." He has grasped his nettle frankly and firmly; and his revised thesis for the Edinburgh D.Phil., while distinctly superior to the common run of such exercises, will materially smooth the path of all students of the two tractates. Alike in the translation and in the handling of the matter and of the notes the work is thorough and independent.

Messrs. Dent issue in their excellent series of "The Temple Greek and Latin Classics" *The Satires of Juvenal*, with Gifford's spirited verse translation on opposite pages, and with a brief introduction and concise and useful notes by A. F. Cole, B.A., Scholar of King's College, Cambridge (2s. 6d. net). The volume will be widely and warmly welcomed.

The Syllabus of "The Restored Pronunciation of Latin," approved by the Philological Societies of Oxford and Cambridge, and recommended by the Classical Association for adoption by classical teachers, is published as a leaflet (1d.; 2d. post free), under the authority of the said societies, by the Cambridge University Press (Cambridge Warehouse, Fetter Lane, E.C.).

MATHEMATICS.

Elementary Modern Geometry. Part I. By H. G. Willis, M.A. (2s. Clarendon Press.)

The volume treats well the ground covered by it. The author enters more fully than is usual into the first principles of his subject. The average junior student is not likely to appreciate thoroughly the general discussion unless a teacher enlarges considerably upon, and at times freely translates, the text, but a skilled reader will follow most of the arguments with much pleasure and interest. The first chapter is of an experimental and introductory character; the second and third give rigorous, and in general excellent, proofs of the principal theorems and problems of the First Book of Euclid (exclusive of those on parallels), and these chapters include also demonstrations of many allied, important, and well known riders. The fourth chapter considers the subject of parallels and introduces to the student's notice the idea of Euclidean and of non-Euclidean space. Some reference is made in the course of the volume to graphs and graphical problems. A full complement of exercises completes the contents of this valuable text-book.

The Winchester Arithmetic. By C. Godfrey, M.A., and G. M. Bell, B.A. (3s. Cambridge University Press.)

We have before us the pupil's edition, consisting of a large and very varied collection of arithmetical exercises, many of which are suitable for oral work. The corresponding teacher's volume is, we understand, interleaved, and, besides containing in similar positions on adjoining pages the pupil's problems and their answers, it includes model examples fully worked. Many of the questions are practical in character and calculated to excite interest in their solution. Some algebra, in its primary character of universal arithmetic, finds place in the work, and the authors also intend that logarithms and negative numbers should form a part of the school course in arithmetic.

Clive's Arithmetics for Scheme B (Standards I.–VII.). Edited by William Briggs, LL.D., D.C.L., &c. (Standards I., II., III., 2d. each; Standards IV., V., VI., VII., 3d. each.)

A useful compilation, affording ample scope for practice in working arithmetical exercises and problems. Definitions and rules are simply and concisely expressed; all explanation is, however, intended to be verbal. The scholars' books do not contain the answers to the questions set, but these have been separately published in three parts.

MODERN LANGUAGES.

A New German and English Dictionary. Revised and considerably Enlarged by Karl Breul, M.A., Litt.D. Cantab., Ph.D. Berl., Cambridge University Reader in Germanic. (7s. 6d. net. Cassell.)

In Dr. Breul's hands the work has undergone drastic revision—correction, rearrangement, addition. Constant regard has been had to the special difficulties of English-speaking people in writing German: for instance, the case required by prepositions that take more than one case is inserted in brackets after particular vocables or expressions. Similarly, much care has been bestowed upon the rendering of foreign terms by their true German equivalents. New additions include thousands of idiomatic phrases, proverbs, familiar quotations, colloquial expressions, and even important dialect terms. Generally, the vocabulary has been adapted to the modern practical use of German in every department. The volume is now probably the most useful German dictionary of manageable dimensions available to English readers and students of German.

Corneille: *Le Cid.* Edited, with Introduction and Notes, by H. W. Eve, M.A., formerly Fellow of Trinity College, Cambridge, late Headmaster of University College School, London, Officier d'Académie. (2s. Cambridge University Press. Pitt Press Series.)

This edition will go far to modify the editor's remark that "'Le Cid' is scarcely well enough known in English schools." It certainly ought to be well known: "its atmosphere of chivalry and its freshness, as written before the form and language of the French drama was stereotyped, serve to make it more attractive to young people than most of the classical plays." The introduction contains brief and pointed sections giving a life of Corneille, an appreciation of his qualities, an account of the Cid in history and in legend, the plot of "The Cid," remarks on the Three Unities, and notes on the characters of the play. The "Examen" is appended to the text. The annotation is judicious and adequate. A very attractive and useful edition.

The Cambridge University Press issues a third edition of *The*

Teaching of Modern Foreign Languages and the Training of Teachers, by Dr. Karl Breul (2s. net.). The matter of the previous editions has been carefully revised and somewhat enlarged, and to that is now added an enlarged reprint of the author's lecture "On the Training of Teachers of Modern Languages" delivered some twelve years ago to the members of the College of Preceptors. A full index is also provided. Needless to say, the volume should be conned by all that are interested in the progress of modern language teaching.

ENGLISH LITERATURE.

"Periods of European Literature" (edited by Prof. Saintsbury).—*The First Half of the Seventeenth Century*. By Herbert J. C. Grierson, M.A., Chalmers Professor of English Literature in the University of Aberdeen. (5s. net. Blackwood.)

Prof. Grierson has had the somewhat difficult and thankless task of infusing life and interest into a period seldom rising to the first order of literary power or form. In his three chapters on English drama, poetry, and prose—especially in the first and third—he has been anticipated by the brilliant work of his master and professorial predecessor Minto; and in his two chapters on French Verse and Prose and French Drama he has had to follow his ingenious and versatile editor. He has, however, passed the whole of the materials through his own crucible, and expresses the results with independent judgment; and it is no small praise to say that he amply justifies his place beside his forerunners. In the English sphere he is navigating for the most part in broken waters—not so much in a scene of disintegration (as Prof. Barrett Wendell would have it), nor in a period of decadence (as Mr. Gosse would have it), but rather in a welter of confused and conflicting influences generated by the Renaissance, the Reformation, and the Counter-Reformation. Italy and Germany claim but a single chapter between them—a sufficient recognition in point of space, occupied as the space is with sound discernment and deft expression of characteristics. The most original and distinctive portion of the volume is the first two chapters, on Dutch Verse and Prose and Dutch Drama, the principal figures being Vondel and Hooft, and the distinguishing note of the poetry being natural, personal, and sincere. Some brief poetical specimens are skilfully turned in English. Those two chapters make a distinctly valuable addition to the English record of European literature. The whole volume is fresh, careful, and competent, and it will be very welcome to students of the period, though the more special interests of the author throw the work somewhat out of balance from the European point of view.

The World's Classics. (1s. net each. Henry Frowde, Oxford University Press.)

There is no finer series of reprints of the best English literature in handy form and at an astonishingly small price. The volumes are beautifully printed and agreeably got up. No. 76, the third volume of Chaucer, contains the whole of "The Canterbury Tales," after Prof. Skeat's text. Nos. 83–84 give Johnson's "Lives of the Poets," with an excellent introduction by Arthur Waugh. No. 116 is a new and revised edition of Prof. Campbell's fine rendering of the seven plays of Sophocles in English verse.

ATLASES, MAPS, AND CHARTS.

The *Harmsworth Atlas and Gazetteer* claims to be "the most complete atlas in the world, and at the same time the cheapest." It will contain 500 maps and diagrams, with a gazetteer of 105,000 references, and will be issued in 36 fortnightly parts (7d. each). The maps will be political, physical, commercial, &c. Thus Part I. has a general map of Europe, with inset population map; a map of the Home Counties and the East of England, with insets of Portsmouth, Southampton, Dover, and the docks of London and Hull; maps of France and the Low Countries, and of the Near East, each showing industries and communications; and a map of the Atlantic Ocean, showing cables and ocean depths. The maps are very full and clear, and indicate most laborious efforts to supply the fullest practical information.

Messrs. John Walker & Co. (Warwick Lane, E.C.) publish the "*Ideal*" *Atlas of the World*—a new series of 80 physical and political maps with statistical text (1s. net). The maps, though very detailed, are also very clear; the form is convenient; and the volume will be most useful.

In our October issue (page 452) we noted "An Elementary Handbook of Fruit Culture" compiled for use "in connexion with the Five Charts illustrating Planting, Pruning, Propagation, Budding, and Grafting of Fruit Trees and Roses, published by the Worshipful Company of Fruiterers." The *Five Charts* (5s. net per set; or 2s. 6d. net singly; package and carriage extra) have been drawn by Lorna F. Bunyard, and printed by Messrs. W. H. & L. Collingridge, who also publish them for the Fruiterers' Company. They are comprehensively illustrative of the five operations above mentioned, and they are skilfully drawn, beautifully printed, and substantially mounted, ready to hang on the wall. Charts I. and II. measure about 26 ins. × 20 ins.; the rest 30 ins. × 20 ins. The low price seems to indicate an educational rather than a commercial motive. We cordially commend the series.

Philips' Model Duplex Maps (1d. net each) form a series of 16—the political map and the physical outline in relief facing each other, together with a concise statement of the main geographical points in systematic paragraphs, and some examination questions thereon. Good and handy.

Messrs. W. & A. K. Johnston issue Set I. of their new series of *Brush-Drawing and Nature-Study Charts*, by T. Ansell (8s. 6d., on strong paper, in cloth case). There are 16 sheets in the set, about 23 ins. × 18 ins. The illustrations are progressive, well chosen, and skilfully executed.

AN INDISPENSABLE ANNUAL.

Hazell's Annual for 1907, edited by W. Palmer, B.A. Lond. (3s. 6d. net, Hazell, Watson, & Viney), is the 22nd issue, and it stands revised up to December 1 last. It seems perfunctory to say that it deals in great range and fullness with the men and the topics that people want to know about. One must turn the leaves and dip into subjects that one knows about specially in order to appreciate the care and labour that have been bestowed upon the compilation. Besides the ordinary course of details there are also special articles by experts, dealing with the principal events of the past year. The present issue runs to some 700 pages, and compares very favourably with its predecessors.

MISCELLANEOUS.

The National Liberal Federation, by Robert Spence Watson, LL.D., President of the organization from 1890 to 1902, is a full and careful history of the proceedings of the Federation from its establishment in 1877 to the General Election of 1906. Mr. Birrell—himself President 1902–6—furnishes a recommendatory preface; and there is a substantial index. It is a very interesting political survey from its particular standpoint. (5s.)

The Red Laugh, by Leonidas Andreief, translated from the Russian by Alexandra Linden (1s. net, Fisher Unwin), describes, in the form of "fragments of a discovered manuscript," scenes typical of the hardships of the Manchurian war, with the miseries individual and social resulting. The author has a strong psychological faculty and a great power of dramatic presentment. The first words—"horror and madness"—strike the keynote.

Messrs. Cassell are issuing a new edition of *The Nation's Pictures*, to be completed in 24 fortnightly parts (7d. net each). The work consists of beautiful reproductions in colours of the best modern paintings selected from the National Galleries of London and the chief provincial cities. Part I. contains five pictures by Leighton, Napier Hemy, Briton Riviere, MacWhirter, and John Collier—most varied and admirably reproduced. The whole collection, it is justly claimed, constitutes "an art gallery for every home."

The University Extension Guild issue through Messrs. Bacon a good *Map of London showing Local Centres for the Extension of University Teaching, University of London*, 1876–1905. (1s.)

The Christmas number of the *Boy's Own Paper* and the Extra Christmas part of the *Girl's Own Paper* are "crowded with seasonable fare," and have interesting and good frontispieces and other illustrations.

Mr. Gordon Dunkerly (18 Claremont Avenue, New Malden, Surrey) offers a handy device for classifying and filing notes by means of card slips turning on a collar-stud.

The Black Autocopyist (The Autocopyist Company, 64 Queen Victoria Street, E.C.) appears to be a very efficient duplicating apparatus and time-saver. Specimens of its work produce a most favourable impression.

CALENDARS.

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The R.T.S. publish with Part I. of a New Series of "Friendly Greetings" *The Pilgrim Almanac*, 1907—a large sheet with portrait of Bunyan and eight coloured pictures representing scenes from "The Pilgrim's Progress."

NEW YEAR GIFT-BOOKS.

Series of English Classics.

Cassell's "Pocket" editions deserve attention at this season. An excellent specimen is *Pope's Iliad of Homer*, edited by Prof. A. J. Church, and furnished with twenty-four full-page illustrations by Wal Paget (2s. net). Prof. Church writes a scholarly and charming introduction, dealing with the main points of interest in exemplary temper and with sound sense. The type is good, and the get-up is tasteful and attractive.

The "York Library" too is rich in good literature presented in an agreeable form. The new volume, *Classic Tales*, with an introduction by C. S. Fearenside, M.A. (2s. net), contains "Rasselas" (Johnson), "The Vicar of Wakefield" (Goldsmith), "A Sentimental Journey" (Sterne), and "The Castle of Otranto" (Horace Walpole)—four tales that "claim attention on at least three distinct grounds—as entertainments, as documents, and as landmarks." Mr. Fearenside's introduction is instructive and suggestive. The get-up is agreeable and tasteful. The publishers are Messrs. George Bell & Sons.

Elsewhere we refer to Mr. Henry Frowde's excellent series of "The World's Classics," which might well reinforce the list of gift-books on the ground alike of literary merit and of technical production. Very similar is Mr. Frowde's capital series of "The Boys' Classics." At the moment we happen to have before us No. X., *The Scalp Hunters*, by Captain Mayne Reid, which has delighted boys for a good half century, and No. XI., *The Life, Adventures, and Piracies of the Famous Captain Singleton*, by Defoe, the very title of which promises interesting and varied business (1s. net each). Each volume has half a dozen illustrations.

Mr. Frowde also issues in good type and in tasteful binding (1) *Cobbett's Advice to Young Men*, from the edition of 1829; and (2) *Cobbett's English Grammar*, with an Introduction by H. L. Stephen, Judge of the High Court, Calcutta (2s. 6d. net each)—both charming books—even the Grammar; for it is not as other grammars.

From time to time we have noticed with pleasure the successive volumes of "The Red Letter Shakespeare" (1s. net each, Blackie), which would also make delightful gift-books in a modest way. Here we have *Measure for Measure* and *King Henry IV., Part II.*, edited by E. K. Chambers, and charmingly got up.

Mr. Edward Arnold has included in his "English Literature Series" (1) *Ivanhoe* (Scott), abridged and edited by the Rev. C. F. A. Wimberley, M.A., assistant master at Loretto School, and (2) *A Tale of Two Cities* (Dickens), abridged and edited by J. Conolly, Head Mistress, Haberdashers' School for Girls, Hatcham (1s. 6d. each). They are beautifully printed and nicely got up, and each has eight full-page plates, the "Ivanhoe" plates being reproductions from the famous Abbotsford Edition of the Waverley Novels (1844). The volumes are suitable for home as well as for school reading.

Then there are the series of "*Oxford*" *Poets*, and other "Oxford Editions" (Frowde); the series of the *Golden Poets* (Jack); the *Temple Series of English Literature for Schools* (Dent); the *Athenæum Press* series (Ginn); the *Belles-Lettres Series* (Heath); the *King's Classics* (Moring); the *Mermaid Series* (Fisher Unwin); Methuen's *Standard Library*; the *Red-Letter Library* (Blackie); Mr. Harrap's *Story* series; the new *Prize Books* and Lang's *Fairy Books* series (Longmans); Macmillan's *Prize Book* series; *Everyman's Library* (Dent); and many other series of classical English works noticed in our columns on occasion. Such volumes, even when primarily for school use, would make modest gifts for such as regard the matter more than the pictures. Also *Treasuries* of English Literature, such as those just issued by Messrs. Constable and by the Clarendon Press.

For Boys and Girls.

Collins' Clear-Type Press issues a number of stories suitable for boys or for girls, nicely printed, illustrated, and got up. There is (1) *In a Land of Beasts*, by E. Everett-Green, who is always popular, with illustrations by A. A. Dixon (5s.). The land of beasts is a West Country farm, where some children of an officer believed to have been killed in frontier warfare in India are sent by an aunt to recruit after illness. The little ones get into mischief, and otherwise distinguish themselves. The story is well written and full of interest.—(2) *Held by Rebels*, by Tom Bevan, illustrated by Percy Tarrant (2s. 6d.), is a vigorous and stirring story of Jack Cade's Rebellion, giving also a vivid picture of the time and an historical account of the episode.—(3) *Dear Sweet Anne*, by Bella Sidney Woolf, illustrated by Frances Ewan (3s. 6d.), is a crisp and bright story, with a differentiation of the friend from the lover.—(4) *Brightest and Best*, by Mrs. Herbert A. Farley, with coloured illustrations (3s. 6d.), consists of Bible stories retold in simple language suitable for little ones. Sunday-school teachers will find it useful and suggestive. (5) *The Mascotte of Sunnyside*, by E. L. Haverfield, with eleven illustrations by T. H. Robinson (6s.), is a character story, simply and ingeniously worked out at school. The mystery of Sybil is worth exploring.—(6) *Maisie's Discovery*, by Bessie Marchant, illustrated by Richard Tod (5s.), is the story of a search for a father, from a Chilian farmhouse to an English village. There is an incidental revolution, of course; and the English chaplain at Valparaiso plays a part in the tangle of Maisie's affairs.—(7) *Barbara in Brittany*, by A. E. Gillie, illustrated by E. Heatly (2s. 6d.), narrates the experiences of a girl of twelve in the house of two rather erratic maiden ladies. All these volumes are well written and entertaining.

Messrs. Sampson Low, Marston, & Co. publish in their new illustrated edition of Miss Louisa M. Alcott's stories *Rose in Bloom*, the illustrations—eight in number—by Harriet Roosevelt Richards (6s.). The author says "there is no moral to this story," and "Rose is not designed for a model girl." Anyhow the book is amusing and not infrequently instructive. It is spaciously got up.

Andrew Goodfellow, by Helen H. Watson (Mrs. Herbert A. Watson), is a tale of 1805 (6s., Macmillan), with a flavouring of salt water and powder, but more occupied with a tangle of private histories. The "little lieutenant"—Goodfellow—was "a man of great soul"; "'e wur the best o' the bunch," and he fought with Nelson. The literary and social life of the time is to some extent woven in, and special pains have been taken to present in historic detail the life in the town of Plymouth Dock in these olden days. A very well written and soundly motived story.

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For readers interested in the history of art there is the charming and masterly series of "Miniature Portfolio Monographs" (2s. net each, Seeley). We have at the moment (1) *Gainsborough*, by Sir Walter Armstrong, Director of the National Gallery of Ireland—a new edition; and (2) *The Early Work of Raphael*, by Julia Cartwright (Mrs. Henry Ady)—also a new and revised edition.

For the Children.

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(*Continued on page 33.*)

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Messrs. Hachette, as usual, issue a variety of handsome and pretty volumes suitable to the season. There is (1) *Le Forban Noir*, by Pierre Maël, with 60 illustrations (one-third of them full-page) by Vogel (10 fr.). It is a lively story of the sea—the wreck of a Spanish merchantman on the Breton coast, the rescue of certain of the people aboard by the local lifeboat, including a cabin boy, who figures throughout the narrative, which is sufficiently exciting and varied both on land and on sea. The settling of accounts with the Black Pirate is a prolonged and stirring business. By the way, the illustration on page 21 misconceives the text.—*Mademoiselle L'Amirale*, by Mme. de Bovet, with 34 illustrations (about half of them full-page) by Tofani (5 fr.), is the story of a spoiled child—daughter of a French naval captain and a Martinique Creole he had married on the Antilles station. The vivacious wilfulness of the young lady alike at home, in society, and at school is actively maintained. Eventually, however, a cure is found.—*Pauvre Petit Frédy*, by Mme. Charlotte Chabrier-Rieder, with 54 illustrations by Dutriac (3½ fr.), belongs to the charming "Bibliothèque Rose Illustré." Frédy's experiences at his uncle's (or, rather, his uncle's wife's) "Institution d'Education Rationnelle," and his widowed mother's experiences as lady companion to M. and Mme. Tampon, "vieux rentiers sans enfants, qui ne sont plus bons à grand'chose," are amusing and absurd enough.

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EDUCATION.

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[(1) In effect, a statistical appendix to Annual Report 1905-6.]

Bread-and-Butter Studies, and their relation to the Higher Education of Workmen: an Address to Technical Students. By William Ripper, M.Inst.C.E., Professor of Engineering in the University of Sheffield. 6d. net. Longmans.

Chile: Anales de la Universidad, Tomo CXVII., Año 63°, Novembre-Diciembre de 1905. Santiago de Chile: Imprenta Cervantes.

City and Guilds of London Institute: Report of the Council, 1906. Gresham College, Basinghall Street, E.C.

Deaf and Blind. (1) American Association to promote the teaching of Speech to the Deaf: Address of the President, Mr. A. L. E. Crouter, at the Seventh Summer Meeting, August, 1906. (2) Department of Commerce and Labor, Bureau of the Census—Special Reports: The Blind and the Deaf, 1900. Washington: Government Printing Office. (3) Possibilities of Deaf Children. By Mary S. Garrett, Principal and Co-founder of the Home for the Training in Speech of Deaf Children before they are of School Age, Philadelphia. Written for the Conference of the National Congress of Mothers, 1906. (4) Extract from Report of Proceedings relative to Classes and Public Schools for the Deaf and the Blind in the French Chamber of Deputies, March 3, 1906. (5) Helen Keller. By John Hitz. Reprint from the *American Anthropologist* (N.S.), Vol. VIII., No. 2 (April-June, 1906). Lancaster, Pa., U.S.A.: New Era Printing Company. (6) How Helen Keller was taught Speech. Volta Bureau Reprints of Useful Knowledge, No. 47. Washington: Gibson Brothers.

L.C.C.—(1) Report of the Education Committee submitting the Report of a Section of the Special Schools Sub-Committee on their Visit to the Industrial School Agency at Llandilo in August, 1906. 4d. (2) Report submitting Report of the Council's Officers on Bathing Arrangements in Schools in Germany and Holland. 6d. King.

Libraries, Finsbury Public: Descriptive Handbook to Juvenile Literature. Compiled by Harry G. T. Cannons, Borough Librarian.

Libraries, Glasgow Corporation Public: Index Catalogue of the Dennistoun District Library. 4d. paper; 8d. cloth. Maclehose.
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Manchester: Fourth Annual Report of the Education Committee, 1905-06.

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Agriculture and Fisheries. Board of. Leaflets: No. 167, Ducks and Duck-breeding; No. 168, Hints on the Formation of Permanent Pastures; No. 174, Tree Root-rot; No. 175, The Use of Waste Organic Substances as Manures.
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MATHEMATICS.

16040. (W. J. Dobbs, M.A.)—A bullet was projected from a point on a horizontal plane, and just grazed the top of a wall 1,000 yards distant. It struck the plane 10 yards beyond the wall, which is 10 feet high. Neglecting the air resistance, calculate the velocity of projection, the time of flight, and the greatest height above the plane to which the bullet ascended.

Solution by A. H. Gillson.

Let u be the velocity of projection in feet per second, and θ the angle of projection. If T be the time that elapses before the bullet passes near the wall, then

$$3000 = u\cos\theta\,.\,\mathrm{T},\quad 10 = u\sin\theta\,.\,\mathrm{T}-\tfrac{1}{2}g\,.\,\mathrm{T}^2 \;\ldots\ldots\; (1,\ 2).$$

Eliminate T from (1) and (2), and

$$10u^2 = u^2\tan\theta\,.\,3000-\tfrac{1}{2}g\,.\,3000^2\sec^2\theta \;\ldots\ldots\; (3).$$

Also range on horizontal plane $= (2u^2\sin\theta\cos\theta)/g = 3030$ ..... (4).

Substitute this value of u^2 obtained from (4) in (3), and multiply through by $2\cos^2\theta$, and $\theta = \tan^{-1}\frac{101}{300}$ ..... (i.).

Substitute the value of $\sin\theta$ and $\cos\theta$ obtained from (i.) in (4); then (taking with the Proposer the value of g as 32·2 ft./sec², and working the results to three significant digits) we get $u^2 = \frac{80160}{5}$ or $5010g$; therefore $u = 402$ feet per second approx. ..... (ii.).

Also greatest height attained $= (u^2\sin^2\theta)/2g = 255$ feet .....(iii.).

Also, if t be the time of flight,

$$t = (2u\sin\theta)/g = 7{\cdot}96 \text{ seconds} \;\ldots\ldots\; (\text{iv.}).$$

16070. ("Cymro.")—Prove geometrically that a chord of an ellipse which subtends a constant angle at the focus always touches an ellipse with the same focus and directrix.

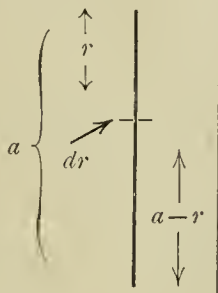
Additional Solution by R. F. Davis, M.A.

(i.) If the tangent at a point P of a conic (focus S) intersects the directrix KK′ in Z and PM is perpendicular to KK′, then ZP divides the angle SZK in such a manner that the perpendiculars from any point on ZP on ZS, ZK are in a constant ratio (e : 1). Conversely, if S is a given point, KK′ a given line, Z any variable point on KK′, then the envelope of a line through Z dividing the angle SZK in such a manner that the sine of one part is in a constant ratio to the sine of the other part is a conic having S for focus, KK′ for directrix, and the constant ratio for eccentricity.

(ii.) Now let PQ be a chord of a conic subtending a constant angle at the focus S. Produce PQ to meet the directrix KK′ in R, and draw PM, PL perpendiculars on KK′, SR respectively. Then SP : PM is constant. Also PL : SP is constant; for PSL is the complement of half the given angle. Hence PL : PM is constant, and the envelope of PQ is a conic, focus S, directrix KK′.

15949. (C. Bickerdike.)—In Price's *Infinitesimal Calculus*, Vol. iv., p. 129, the following question is proposed:—Show that $w^2a/6\mathrm{E}$ is the work done when a heavy elastic string of length a and weight w hanging vertically is stretched by its own weight. Is the statement correct?

Solution by Ernest W. Hill.



Consider any element of the string dr at a distance r from the point of support. The lengthening of this element dr due to the stress caused by the mass of the remainder of the string of length $a-r$ will be $dr\,(w/\mathrm{E})\,[(a-r)/a]$, and the work done by reason of the point of application of the force $w\,[(a-r)/a]$ being moved through a distance $dr\,(w/\mathrm{E})\,[(a-r)/a]$ will be $(w^2/\mathrm{E})\,[(a-r)/a]^2\,dr$; therefore

$$\text{total work done} = \int_{r=0}^{r=a}\frac{w^2}{\mathrm{E}}\left(\frac{a-r}{a}\right)^2 dr = \frac{w^2}{\mathrm{E}a^2}\int_0^a (a^2-2ar+r^2)\,dr$$

$$= \left[a^2r-\tfrac{1}{2}\left(2ar^2+\tfrac{1}{3}r^3\right)\right]_0^a = \frac{w^2a}{3\mathrm{E}}.$$

Thus the expression $u^2a/6\mathrm{E}$ is not correct.

16094. (Lt.-Col. Allan Cunningham, R.E.)—Let

$$\mathrm{E}_n = 2^{2^n},\quad \mathrm{F}_n = \mathrm{E}_n+1,\quad \mathrm{G}_n = \mathrm{E}_n-1.$$

Show that every F_n (>5) may be expressed algebraically in the form

$$2\mathrm{F}_n = t^2-\mathrm{G}^n\,.\,u^2,$$

and obtain the expression. Discuss the possibility of obtaining a second expression $2\mathrm{F}_n = t'^2-\mathrm{G}_n\,.\,u'^2$ which, together with the former, shall be suitable for factorizing F_n.

Solution by the Proposer.

Here $\mathrm{E}_n = \mathrm{E}_{n-1}^2$, and $\mathrm{G}_n = \mathrm{F}_0\,.\,\mathrm{F}_1\,.\,\mathrm{F}_2\ldots\mathrm{F}_n$, and note that $n>1$, since $\mathrm{F}_n>5$. Hence every F_n (>5) is of form $(8m+1)$ and every factor of every F_n is of same form; hence both ± 2 are 2-ic residues of every F_n (>5). Now $\mathrm{G}_n \equiv -2 \pmod{\mathrm{F}_n}$, and $2\mathrm{F}_n \equiv +4 \pmod{\mathrm{G}_n}$. Hence G_n is a 2-ic residue of F_n, and $2\mathrm{F}_n$ is a 2-ic residue of G_n. Hence $2\mathrm{F}_n$ is certainly expressible in the principal genus of the determinant $+\mathrm{G}_n$, and possibly in the principal class ($t = \mathrm{G}_n\,.\,u^2$).

To investigate this, try F_2, F_3, F_4; these give

$$2\,.\,17 = 7^2-15\,.\,1^2,\quad 2\,.\,257 = 53^2-255\,.\,3^2,\quad 2\,.\,65537 = 3857^2-65535\,.\,15^2.$$

These give the clue to the general (algebraic) forms

$$2\mathrm{F}_n = (\mathrm{G}_{n-2}\,.\,\mathrm{F}_{n-1}+2)^2-\mathrm{G}_n\,.\,\mathrm{G}_{n-2}^2 = t^2-\mathrm{G}_n\,.\,u^2,$$

which will be found to reduce to $2\mathrm{F}_n$, as it should. Moreover, this is the base form (*i.e.*, t, u are minima). For the unit form of the determinant $+\mathrm{G}_n$ is $\tau^2-\mathrm{G}_n\,.\,v^2 = +1$, where $\tau = \mathrm{E}_{n-1}$, $v = 1$, and the above values of t, u satisfy the condition of minima, viz., $t/u > (\tau+1)/v$ [see result (13), Art. 14 of the Introduction to the writer's Tables of *Quadratic Partitions*, 1904].

Next, as to the chance of factorising F_n by the discovery of a second, but independent, partition ($t'^2-\mathrm{G}_n u'^2$). The determinant ($+\mathrm{G}_n$) is not really suitable for this purpose; for it may be shown* that $+\mathrm{G}_n$ is a determinant containing more than one class per genus (when $\mathrm{G}_n>255$); so that there is no *a priori* certainty that a second (independent) partition exists (even when F_n is really composite), and the non-existence of a second (independent) partition (if it could be proved) would not suffice to prove F_n prime. Of course a second (independent) partition—if it could be found—would suffice to factorise F_n. But the difficulty of finding this second partition would certainly be very great, as the numbers F_n now requiring examination are so large. And note that the minimum t', u' would have to be greater than the t, u above found.

15887 & 15944. (Professor F. Rogel.)—(15887) To find directly the common tangents of two conic sections having a common focus.

(15944) To find directly the cuts of two conic sections having a common focus.

Solution by C. E. Youngman, M.A.

Reciprocate the conics from their common focus S, getting two circles (the inverses of the two auxiliary circles, which we may suppose given); note the common points and tangents of these, and reciprocate back again. This seems the obvious method, and the drawing of it would be simple enough, especially if the common tangents of the circles are obtained by ruler and eye—probably the most accurate way, though not strictly geometrical. In Question 15887 it would only be necessary to take Y, Y′ where the auxiliary circles meet, and there draw perpendiculars to SY, SY′.

Question 15944 may be regarded also as a problem in "tangencies"; for the required "cuts" are the centres of circles passing through S and touching two given circles: those, namely, whose centres are F, F′, the other foci, and radii the corresponding transverse axes. of the conics. A convenient construction is the following, slightly modified from Vieta's, so as not to need the centres of similitude:—Draw FF′, giving AB and A′B′ diameters of the two circles (let AB and A′B′ have the same direction); find a, b, a', b', the centres of the circles SAA′, SBB′, SA′B, SAB′; then R, R′, the radical centres of the systems $(a)(b)(\mathrm{F})$ and $(a')(b')(\mathrm{F})$; and draw the two orthogonal circles, cutting (F) at p, p' and q, q'. Then, where Fp, Fp' meet ab, and Fq, Fq' meet $a'b'$, lie the required points.

The lines ab, $a'b'$ meet, it is known, at O, the radical centre of the point-circle S and the circles F, F′; but the radical axis of S and (F) is the polar of S with respect to one of the auxiliary circles; it is therefore the S-directrix of one of the conics; hence O is the point common to the two S-directrices. We find then that ab, $a'b'$ must be the locus of points whose distances from these directrices are inversely as the eccentricities of the conics; and they might be constructed from that property.

16014. (R. F. Davis, M.A.)—Where is there to be found an investigation of the locus of the focus of a parabola which passes through three given points?

Discussion by Professor Nanson.

The problem has been discussed by Salmon, Burnside, and Hirst (see *Reprint*, First Series, Vol. iv., p. 19, and Salmon's *Conics*, 5th Ed., pp. 389, 390.

Taking the three fixed points as reference points, any conic through them is $f/x+g/y+h/z = 0$, and the condition that it touches the line l, m, n is $\sqrt{(fl)}+\sqrt{(gm)}+\sqrt{(hn)} = 0$. It at once follows that the locus of the meet P of tangents from two fixed points P′, P″ to a conic

* For proof of this the writer is indebted to the Rev. J. Cullen, S.J.

through the three fixed points and touching the line l, m, n is

$$\begin{vmatrix} l, & m, & n \\ \sqrt{X'}, & \sqrt{Y'}, & \sqrt{Z'} \\ \sqrt{X''}, & \sqrt{Y''}, & \sqrt{Z''} \end{vmatrix} = 0 \quad\text{.....(1)},$$

where X, Y, Z are the co-factors of x, y, z in the determinant (x, y, z). When rationalized one is of order 16 in x, y, z. But the locus is in reality of order 12 (Salmon, *l.c.*). The apparent discrepancy is accounted for by the fact that the rationalized equation is satisfied when $(x, y, z) = 0$, because then $X' : Y' : Z' = X'' : Y'' : Z''$. The inference is that the rationalized equation must be divisible by $(xyz)^4$.

Now, making the line l, m, n coincide with P′P″, we get for the locus of the meet P of tangents from P′, P″ to conics touching P′P″, and passing through the three reference points the curve

$$(\sqrt{X}, \sqrt{Y}, \sqrt{Z}) = 0$$

of order 16. But the line P P″ is now manifestly part of the locus. The remaining part is (Salmon, *l.c.*) of order 8, and the inference is that the rationalized equation is now divisible by $(x, y, z)^8$. Taking P′, P″ at the focoids, we get the locus of the focus of a parabola through three fixed points. It was an analogous treatment of the locus of the focus of a parabola touching three given lines which suggested Question 15146, *Reprint*, New Series, Vol. III., p. 108.

16099. (Professor Cochez.)—Résoudre

$$(ax)^{\log a} = (by)^{\log b}, \qquad b^{\log x} = a^{\log y}.$$

Solution by R. J. Whitaker, J. G. M. B. A., *and others.*

Taking logarithms,

$$\log a\,(\log a + \log x) = \log b\,(\log b + \log y) \quad\text{.....(i.)},$$

$$\log x \log b = \log y \log a \quad\text{.....(ii.)},$$

or $\log a \log x - \log b \log y = (\log b)^2 - (\log a)^2$

and $\log b \log x - \log a \log y = 0.$

Multiply by $\log b$, $\log a$, and subtract; then

$$\log y\,[(\log a)^2 - (\log b)^2] = \log b\,[(\log b)^2 - (\log a)^2];$$

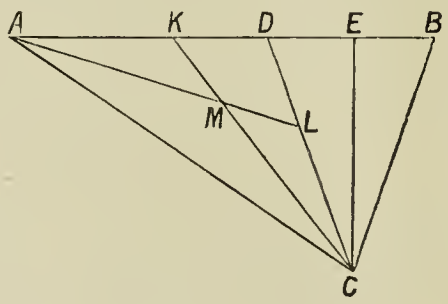
therefore $\log y = -\log b$, unless $a = b$; *i.e.*, $y = 1/b$; similarly $x = 1/a$.

Note.—Some of the Solvers remark that when $a = b$ then $x = y$ = any positive quantity whatever.

15929. (Professor Sanjána, M.A.)—The straight line AB is divided at D so that $AB \,.\, BD = AD^2$; with centres A and D and radii AB and DA respectively, circles are described, meeting in C. Prove by the first two books of Euclid that BC = AD, and that straight lines joining C to the in-centre and circum-centre of ABC cut AB isotomically.

[The first part solves Euclid IV. 10 without using the third and fourth books.]

Solution by Henry Riddell, M.E., *and others.*



AB is divided at D, so that

$$AB \,.\, BD = AD^2.$$

Bisect DB at E and erect a perpendicular. Make DC = DA; then is BC also = DA. Then

$$\begin{aligned} AC^2 &= AE^2 + EC^2 \\ &= AD^2 + DE^2 + EC^2 + 2AD \,.\, DE \\ &= 2AD^2 + AD \,.\, DB \\ &= AD^2 + AD \,.\, AB \\ &= AB \,.\, BD + AB \,.\, AD = AB^2. \end{aligned}$$

Hence the circle with centre A and radius AB will pass through C. Then $\angle DBC = \angle CDB = 2\angle CAB$, thus solving Euclid IV. 10. Now CD passes through the centre of the inscribed circle, since it evidently bisects the angle at C. Bisect the angle at A, cutting CD at L; then L is the centre of the inscribed circle, and, since AB = AC, AL also passes through M, the centre of the described circle. Join CM and produce to K. Then $\angle LAC = \angle KCA$, and (by Euclid I. 26) CL = AK. But, since $\angle CBD = \angle CDB = 2\angle DCB$, BL, bisecting $\angle DBC$, = LC = BD, and BD = AK.

15951. (A. M. Nesbitt, M.A.)—If p be the probability that an event happens m times out of $m+n$ trials, find the chance that it will happen μ times out of $\mu+\nu$ trials.

Correction by D. M. Y. Sommerville, M.A., D.Sc.

The solution of this problem (as given in the *Reprint*, New Series, Vol. X., p. 110) requires correction. That there is an error in it will be readily seen. The Solver, in fact, assumes that the probability of an event happening exactly m times out of $m+n$ is the same as the probability of its happening exactly Km times out of $K(m+n)$. This is not true. For example, the chance that of two throws with a coin one will be a head is $\frac{1}{2}$; the chance that two out of four will be heads is only $\frac{3}{8}$. The fallacy of this assumption is very obvious when we make $m = n$. The formula for the probability of the event happening in any case becomes then

$$q = [pm + (1-p)\,n]/(m+n) = n/(m+n) = \tfrac{1}{2};$$

i.e., whatever is the probability of an event happening exactly m times out of $2m$, the probability of its happening in any case is $\frac{1}{2}$!

The problem may be investigated as follows:—Let q be the probability of the event happening in any case, and consider $m+n$ trials. The chance that the first is a success is q, and the chance that it is a failure is $1-q$. The chance that the first m are successes and the last n failures is $q^m(1-q)^n$. Hence, since the successes may occur in ${}_{m+}C_m$ different orders, the total chance of m successes and n failures is

$$p = {}_{m+n}C_m\, q^m (1-q)^n.$$

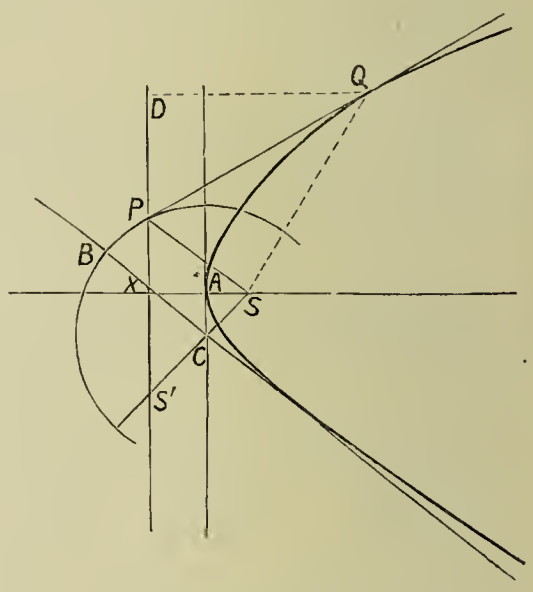
Similarly,

$$s = {}_{\mu+\nu}C_\mu\, q^\mu (1-q)^\nu.$$

Eliminating q between these two equations, we get s in terms of p, m, n, μ, ν.

16032. (H. L. Trachtenberg, B.A.)—A parabola has its focus at a focus of an ellipse and touches its minor axis. Show that the points of contact of a common tangent subtend a right angle at the common focus.

Remark by Professor Sanjána, M.A.



The following is an elementary solution. Through the focus S of a parabola draw a straight line to meet the tangent at the vertex and the directrix in C and S′; then SC = CS′. With S and S′ as foci draw any ellipse; then CB, the minor axis, perpendicular to SC, of course touches the parabola. Let S′X meet the ellipse in P, and draw PQ touching the parabola. By the property of the parabola,

$$\angle SPQ = \angle DPQ,$$

so that PQ is equally inclined to PS and PS′; it is therefore a tangent to the ellipse. And it is known that the angle PSQ is a right angle.

16082. (R. Chartres.)—Sum the series

$$1 - \frac{C_1}{3} + \frac{C}{6} - \frac{C_3}{10} + \frac{C_4}{15} - \ldots$$

where $C_r \equiv$ combinations of n things r together.

Solutions (I.) *by* R. F. Davis, M.A.; (II.) *by* M.V. Arunachalan, M.A.

(I.) Denote the series to r terms by Σ; and in the first case suppose r is odd. Then

$$\tfrac{1}{2}\Sigma = \frac{1}{1\,.\,2} - \frac{1}{2\,.\,3}\binom{n}{1} + \frac{1}{3\,.\,4}\binom{n}{2} - \frac{1}{4\,.\,5}\binom{n}{3} + \ldots \text{ to } r \text{ terms.}$$

Therefore

$$\tfrac{1}{2}(n+1)(n+2)\,\Sigma = \binom{n+2}{2} - \binom{n+2}{3} + \binom{n+2}{4} - \ldots \text{ to } r \text{ terms.}$$

But

$$(1+x)^{n+2} = 1 + \binom{n+2}{1}x + \binom{n+2}{2}x^2 + \ldots,$$

$$(1+x)^{-1} = 1 - x \qquad + x^2 \qquad - \ldots.$$

Multiply these series together and equate the coefficients of x^{r+1} on both sides. Thus

$$\binom{n+1}{r+1} = 1 - \binom{n+2}{1} + \binom{n+2}{2} - \ldots + (r+2) \text{ terms}$$

$$= -(n+1) + \tfrac{1}{2}(n+1)(n+2)\,\Sigma$$

or

$$\Sigma = \frac{2}{(n+1)(n+2)}\left\{n+1+\binom{n+1}{r+1}\right\}.$$

Next let r be even. The result is the same, with the exception that the inner bracket is negative. In either case when the series runs its full course the sum $= 2/(n+2)$. [The rest in *Reprint*.]

15498. (G. H. Hardy, M.A.)—Prove that the reciprocal of the product of two determinants is the product of their reciprocals.

Solution by C. M. Ross.

Take the determinant

$$\Delta \equiv \begin{vmatrix} x_{11} & x_{12} & \dots & x_{1n} \\ x_{21} & x_{22} & \dots & x_{2n} \\ \dots & \dots & & \dots \\ x_{n1} & x_{n2} & \dots & x_{nn} \end{vmatrix} \quad \dots\dots\dots\dots(1).$$

Its reciprocal is

$$\Delta' \equiv \begin{vmatrix} X_{11} & X_{12} & \dots & X_{1n} \\ X_{21} & X_{22} & \dots & X_{2n} \\ \dots & \dots & & \dots \\ X_{n1} & X_{n2} & \dots & X_{nn} \end{vmatrix} \quad \dots\dots\dots\dots(2),$$

X_{rs} in (2) being the co-factor of x_{rs} in (1).

Multiplying together (1) and (2), the result is

$$\Delta\Delta' = \begin{vmatrix} x_{11}X_{11}+\dots+x_{1n}X_{1n} & x_{11}X_{21}+\dots+x_{1n}X_{2n} & \dots & x_{11}X_{n1}+\dots+x_{1n}X_{nn} \\ x_{21}X_{11}+\dots+x_{2n}X_{1n} & x_{21}X_{21}+\dots+x_{2n}X_{2n} & \dots & x_{21}X_{n1}+\dots+x_{2n}X_{nn} \\ \dots & \dots & & \dots \\ x_{n1}X_{11}+\dots+x_{nn}X_{1n} & x_{n1}X_{21}+\dots+x_{nn}X_{2n} & \dots & x_{n1}X_{n1}+\dots+x_{nn}X_{nn} \end{vmatrix}$$

$$= \begin{vmatrix} \Delta & 0 & \dots & 0 \\ 0 & \Delta & \dots & 0 \\ \dots & \dots & & \dots \\ 0 & 0 & \dots & \Delta \end{vmatrix} = \Delta^n;$$

therefore $\Delta' = \Delta^{n-1}$; *i.e.*, the reciprocal of any determinant of the n-th order is equal to the $(n-1)$-th power of the latter. Hence, if Δ denote the product of two n-th order determinants Δ_1 and Δ_2, and D the reciprocal of their product, then

$$D = \Delta^{n-1} = \{\Delta_1\Delta_2\}^{n-1} = \Delta_1^{n-1}\Delta_2^{n-1}$$

= product of the reciprocals of Δ_1 and Δ_2.

QUESTIONS FOR SOLUTION.

16129. (C. W. O'Hara, B.Sc.)—Find the condition that the pressure on the curved surface of a quadrant of a right circular cone immersed in a liquid under gravity, with one plane edge in the surface (not the base), shall be a single force. The condition being satisfied, prove that the single force passes through the point of intersection of the three straight edges of the solid, and find its magnitude and direction. (The pressure at the free surface is supposed to be zero.)

16130. (W. J. Dobbs, M.A.)—A light inextensible thread APB, of length 2 ft., has its extremities fixed at two points A and B, situated 20 in. apart in a horizontal line, and supports at a point P a load of 80 gm. The portions of thread AP and PB are of lengths x in. and $(24-x)$ in. respectively. Show, by means of a graph, how the tension T gm. of AP changes as x changes from 0 to 24, and discuss any peculiarities which occur.

16131. (D. Biddle.)—At the vertices of an equilateral triangle are weights of value p, q, r $(p+q=r)$, which travel along the sides in the same positive direction at a uniform pace. Trace the locus of the centre of gravity. Also extend the investigation to triangles which are not equilateral, on the understanding that, though the sides be unequal, they are traversed by the weights in equal times.

16132. (A. M. Nesbitt, M.A.)—Factorize (A, B, C being angles of a triangle)

$$\begin{vmatrix} 0, & x\cos C+y, & x\cos B+z \\ y\cos C+x, & 0, & y\cos A+z \\ z\cos B+x, & z\cos A+y, & 0 \end{vmatrix}.$$

16133. (T. Stuart, D.Sc.)—Prove that the least *positive* integral values of x, y, z satisfying the equation $x^3 = 5y^3+6z^3$ are *not* given by $x, y, z = 23089, 6629, 12184$. Find them.

16134. (D. M. Y. Sommerville, M.A., D.Sc.)—n, a power of 2, is divided into an even number of parts which are permuted in all possible cyclically different orders, rejecting partitions such as 1 . 3 . 1 . 3 which are repetitions of even partitions of a lower power of 2. Show that the number of such partitions is $2^{n-1}/n$. If n is a prime, show that the number of such partitions is $(2^{n-1}-1)/n$.

16135. (Lt.-Col. Allan Cunningham, R.E.)—Discuss the possibility of expression of a given number N in one or more of the four forms $(t^2 \sim 2u^4)$, $(t^4 \sim 2u^2)$. [All symbols integers; t prime to u.]

16136. (V. Ramaswami Aiyar.)—If $a, b, c, \dots, k$ be positive quantities, not all equal, and n in number where n does not exceed 10, show that

$$\left(\frac{\Sigma a^{13}}{n}\right)^2 > \frac{\Sigma a^{17}b^9}{n(n-1)}, \quad \left(\frac{\Sigma a^{16}}{n}\right)^2 > \frac{\Sigma a^{21}b^{11}}{n(n-1)} \quad \dots\dots\dots(1, 2),$$

$$\left(\frac{\Sigma a^{19}}{n}\right)^2 > \frac{\Sigma a^{25}b^{13}}{n(n-1)} \quad \dots\dots\dots\dots\dots\dots(3).$$

Prove also that, if n exceeds 10, these inequalities are not necessarily true.

16137. (Professor Nanson.)—If $a_0, a_1, a_2, \dots$ are positive quantities in arithmetical progression with common difference d, prove that

$$d(r+1)(a_1^r+a_2^r+\dots+a_n)$$

lies between $a_n^{r+1}-a_0^{r+1}$ and $a_{n+1}^{r+1}-a_1^r$.

16138. (*Communicated by* A. Thomson.)—If $x_1, x_2, x_3, y_1, y_2, y_3$ be the roots of the cubics in x, y obtained by eliminating y, x respectively between the equations

$$(ax+hy+g)/x = (hx+by+f)/y = gx+fy+c,$$

show that $\quad x_2x_3+y_2y_3 = x_3x_1+y_3y_1 = x_1x_2+y_1y_2 = -1.$

16139. (M. V. Arunachalan, M.A.)—If in the expression $1/(1-x+x^2)$ the sum of the even terms be $\phi(x)$ and the sum of the odd terms be $\psi(x)$, then $[\phi(x)]^2-[\psi(x)]^2 = \phi(-x^2)+\psi(-x^2)$.

16140. (Professor Sanjána, M.A.)—Find the limits of the infinite products

$$(1\pm u^2/1^2)(1\pm u^2/3^2)(1\pm u^2/5^2)\dots$$

and $\quad (1\pm u^2/1^2)(1\pm u^2/7^2)(1\pm u^2/9^2)(1\pm u^2/15^2)(1\pm u^2/17^2)\dots,$

and the values of u for which they are convergent.

16141. (W. J. Greenstreet, M.A.)—Tangent planes to one of a family of confocal quadrics contain a straight line which is normal to one of the family. Show that they form an harmonic pencil with the tangent planes to the confocals at the point where the straight line is normal. The locus of the points of contact has this point as double point.

16142. (J. Hodgkinson.)—Given the tangents at a double point, an inflexion, and the inflexional tangent of a cubic, find the envelope of the asymptotes.

16143. (Professor Neuberg.)—On considère les hyperboles équilatères qui passent par deux points fixes A, B et dont une asymptote passe par une point fixe C. Trouver (1) le lieu des centres de ces courbes; (2) l'enveloppe des secondes asymptotes.

16144. (W. F. Beard, M.A. Suggested by Question 15976.)—P, p are corresponding points on an ellipse and its auxiliary circle. Tangents pQ, pQ' are drawn to the ellipse and meet the circle again at q, q'. Prove (1) that QQ', qq', and the tangents at P to the ellipse and at p to the circle all meet on the axis; (2) that if the poles of QQ', qq' to the circle and of qq' to the ellipse are R, r, and R', and if pP meets QQ', qq' at L, l, then the loci of L, l, R, R', r are ellipses concentric with the original ellipse.

16145. (W. Austin Sleigh, B.A.)—In Question 15909 prove that, if ξ be centre of ellipse, I be in-centre, and I_1 ex-centre, corresponding to A, of the triangle ABC, (1) foot of directrix, K, is at distance $s/2c$ from ξ; (2) BI meets AX at distance $e(s-c)$ from X, and BI_1 meets it at distance $es^2/(3c-b-a)$ from ξ; (3) length of semi-diameter conjugate to ξB is $\sqrt{(r_1r_2)}$; (4) $I_1B : I_1C :: \sqrt{r_2} : \sqrt{r_3}$; (5) the parallel straight line to BI_1 through ξ meets BC at distance (BL =) $s/2$ from B; (6) $4\xi T.CL = es^2$, T being intersection of BI_1 and AX; (7) ratio of CL to distance of foot of B ordinate from ξ is that of the eccentricity.

16146. (C. E. Youngman, M.A.)—Construct the triangle with maximum Brocard angle when there are given: (*a*) the circum-circle and one of the Apollonians; (*b*) the base and the foot of the altitude; (*c*) the base and the foot of the bisector of the opposite angle; (*d*) the base and its point of contact with the in-circle.

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9641. (T. A. Storr.)—There are 400 competitors for a prize in a lottery, each person having a number assigned to him, the numbers ranging from 1 to 400. In making the drawing three bags are used. The first, called "the units bag," contains ten balls marked 0, 1, 2, ..., 9; the second, called "the tens bag," contains the same number of balls similarly marked; and the third, called "the hundreds bag," contains five balls marked 0, 1, 2, 3, 4. A ball is drawn from the units bag and placed in the units place on a board; then one from the tens bag and placed in the tens place; and the same for the hundreds bag. The person whose number corresponds to the one drawn from the bags wins the prize. Should a greater number than 400 be drawn, the balls are replaced and the drawing made afresh. Find the expectations of those persons whose numbers range (1) from 1 to 9; (2) from 10 to 99; and (3) from 100 to 400.

9994. (J. C. Malet, F.R.S.)—Through a fixed point O in the plane of a given triangle ABC let two right lines L and M be drawn parallel respectively to AB and AC; if, now, a variable triangle A'B'C' be circumscribed to ABC so that B' shall lie on L, C' on M, and B'C' pass through A, then O is always the centre of mean position of the points A', B', and C' for a system of constant multiples whose ratios are required. *E.g.*, if O be situated on the median through A at a distance below BC equal to the distance above BC of the centroid of ABC, then O is always the centroid of A'B'C'.

10105. (R. W. D. Christie.)—Prove that $(13p-4^nr)10^{3m+n} \equiv 13R$ where m, n, p, r may be any integers whatever.

10589. (Professor EMMERICH.)—Construct an isosceles triangle, knowing any three of the following points:—A (vertex), G (centre of gravity), K (Lemoine point), Ω, Ω' (Brocard points).

10742. (J. GRIFFITHS, M.A.)—If

$$\Omega = a_0 d/da_1 + 2a_1 d/da_2 + 3a_2 d/da_3 + \ldots, \quad \Omega\lambda = -1,$$

and S be a covariant or semi-covariant, prove that $(d/dy + \lambda d/dx)S$ is a semi-covariant. [*Note.*—In this case the operators d/dx and d/dy are supposed to be applied to the coefficients a_n, a_{n-1}, ... as well as to the variables x, y in S.]

11192. (J. J. BARNIVILLE.)—Express the coefficient p in the equation whose roots are the first n natural numbers.

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The following papers were communicated:—

"The Diophantine Equation $x^n - Ny^n = z$," by Major P. A. MacMahon.

"On the Form of the Surface of a Search-light Reflector," by Mr. C. S. Jackson.

"The Potential Equation and others with Function given on the Boundary," by Mr. L. F. Richardson (communicated by Mr. A. Berry).

"On the Limits of Real Variants," by Mr. J. Mercer (communicated by Dr. E. W. Barnes).

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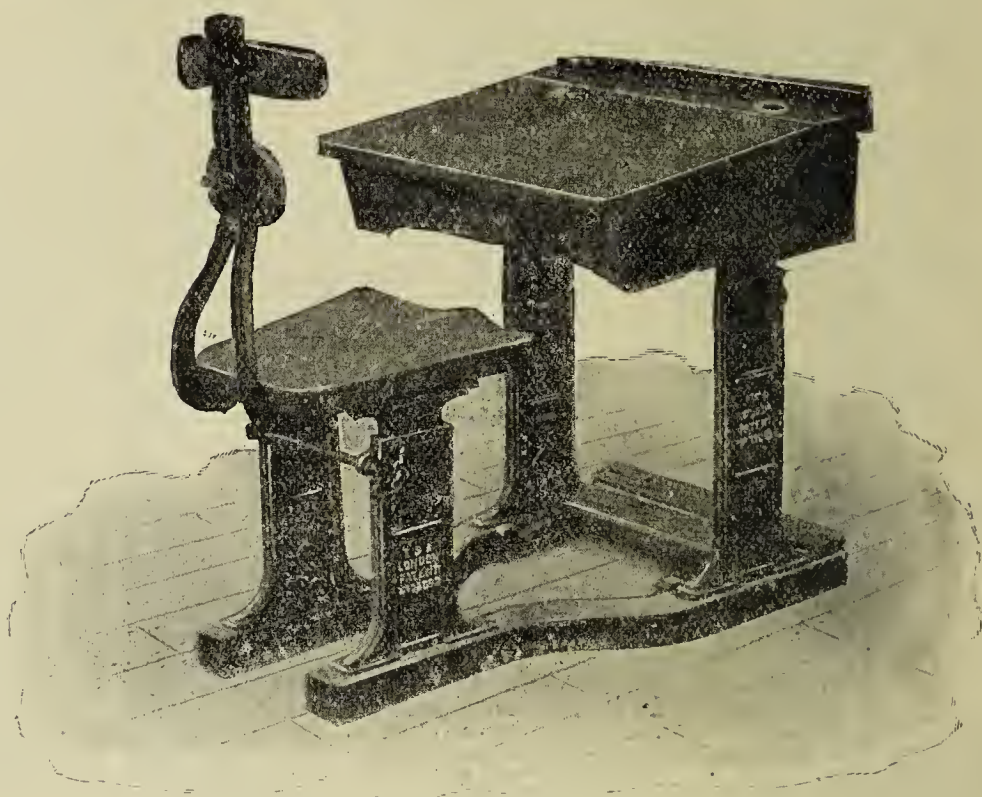

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AND

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Vol. LX.] New Series, No. 550. FEBRUARY 1, 1907. {Published Monthly, price, to Non-Members, 6d.; by Post, 7d. Annual Subscription, 7s.

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2. PRACTICAL EXAMINATION FOR CERTIFICATES OF ABILITY TO TEACH. — The next Practical Examination will be held in **February,** 1907.

3. CERTIFICATE EXAMINATIONS. — The Midsummer Examination for Certificates will commence on the 25th of June.

4. LOWER FORMS EXAMINATIONS. — The Midsummer Examination will commence on the 25th of June.

5. PROFESSIONAL PRELIMINARY EXAMINATIONS.—These Examinations are held in March and September. The Spring Examination in 1907 will commence on the 5th of March.

6. INSPECTION AND EXAMINATION OF SCHOOLS.—Inspectors and Examiners are appointed by the College for the Inspection and Examination of Public and Private Schools.

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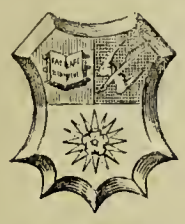

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On the side of German it is difficult to find a pronouncement of equal authority. Perhaps the superior pretensions

* "Life of York Powell," by Oliver Elton, Vol. I., p. 318.

of French have been rather assumed than acknowledged on conscious and detailed argument. A working knowledge of French has no doubt been a more common accomplishment than a like command of German. The superficial similarities of the French vocabulary to the English, misleading though they so often are, give a natural advantage to the French claim, while the very aspect of a page of German characters is forbidding. Yet it may fairly be urged that in the initial teaching of German its forms of expression and its vocabulary are acquired with comparative ease, and that, when once progress is made, it is easier to find in German than in French works literature at once simple, of a high order, and adapted to young minds. We could have wished that Mr. Eve's suggestion of preference for German had been more seriously considered at the Durham meeting; at any rate, Mr. Eve's long and practical experience of both languages invests it with somewhat special interest, and may induce further consideration. The pity is that it should be necessary to balance the respective claims of these two languages; probably, after all, the best solution would be to do the one and not to leave the other undone.

NOTES.

The important educational meetings that we chronicle all too briefly this month again impress the need of some strong and authoritative co-ordinating hand to bring conclusions to a practical bearing. Many of the subjects handled are still in the region of debate; others have already been advanced to what may be regarded as maturity, and it does seem waste of time to leave them in the air till next year and then thresh them all over again and yet be no further forward. Some such feeling as this was most markedly expressed by a resolution submitted to the Assistant Masters in Secondary Schools by Mr. Page, of Charterhouse—a resolution welcoming the growing sense of union among secondary teachers, as shown especially in the formation of the Federal Council, and looking forward confidently to the promotion by the Council of a sound policy in matters of education. "Let them look," said Mr. Page, "at the huge group of questions, complicated questions, which dealt with the well-being of teachers, and see how necessary it was that there should be some common body which would consider these questions and try to settle them in the common interests of the profession"—and, we may add (as no doubt Mr. Page would have added if he had not been specially engaged with one aspect of the matter), in the interest of education. Evidently there is scope for great work before the Federal Council.

Writing in the *Tribune* on the relation of secondary schools to the public interest, "H. C. S." appropriately recalls the remark of Richard Mulcaster, the first Head Master of Merchant Taylors', that "nothing so weakneth the profession as the very nakednesse of the allowance doth." There are many, said Mulcaster, "who commonly use teaching but to shift with for a time and be but pilgrims in the profession, still intending to move to some other kinde of life, either of more ease, which allureth some, or of more gain, which enforceth sore." The remark is still too widely applicable. "What a modern touch!" is the comment of "H. C. S." But, continues "H. C. S.," "it is not merely the inadequate salaries which tend to deteriorate the teachers in secondary schools; equally detrimental is the insecurity of tenure. Is it generally known, we wonder, that assistants in secondary schools have no guarantee against arbitrary dismissal at the will of a single person? There are exceptions to this rule; but it holds in the great majority of schools, and more especially in the case of the most poorly paid staffs. The A.M.A. has done excellent service in regard to this disability. It rightly points out that it does not apply to teachers at universities at one end of the scale or to elementary teachers at the other. The system is generally condemned by the teaching profession, as is shown by the agreement which the Incorporated Association of Head Masters has arrived at with the A.M.A.; and it is encouraging to report that the London County Council is setting an example to Local Authorities in safeguarding assistants in secondary schools under their control. In other parts of the country, too, wherever new schemes are being adopted, one sees signs of progress. There is, still, however, a provoking want of uniformity even in the latest schemes."

Rectorial addresses scarcely bear minute analysis. Perhaps it is sufficient if they present in the rough some worthy conception that may fructify in the youthful academic mind. Probably Mr. Haldane's greatest triumph at Edinburgh was his charming the robustious undergraduates into the unwonted mood of silent listeners. In an address on "The Dedicated Life" (published by Mr. Murray) he deftly linked familiar intellectual conceptions with the practical business of the age, and suffused the whole with a philosophical, not to say a religious, tone. By a "dedicated life" he means "one that is with all its strength concentrated on a high purpose." Let us obey "the Higher Command"; let us seek truth with single mind. "And it is in the devotion to this search after the Most High—a search which may assume an infinity of varied forms—that the dedicated life consists; the life dedicated to the noblest of quests, and not to be judged by apparent failure to reach some fixed and rigid goal, but rather by the quality of its striving." The address was an extremely skilful elevation of a most important commonplace, and will no doubt strike the imagination of his young hearers. At Glasgow Mr. Asquith discoursed with his feet on the solid earth and never a cloud about his head. He was concerned about the relation of universities to the modern world, and the value of academic training in practical life; and perhaps he had more particularly in his mind the ancient English universities. He spoke of the value of literature, whose resources a wise man "would not barter for a king's ransom"; he spoke of history—"the unfolding of the purposes of Providence in the long procession of men and events." He insisted on "an inextinguishable faith in the things which are unseen, the things which give dignity to service, inspiration to work, purpose to suffering, a value immeasurable and eternal to the humblest of human lives." Both exercises will serve hand-

somely. Given the elevating and inspiring effect, there is but irrelevance in a cross-examination in detail.

Prof. Wyld, of Liverpool University, publishes with Mr. Murray, in pamphlet form (1s.), an elaboration of what he had designed to say, if he had not been prevented from being present, at the York meeting of the British Association on "The Place of the Mother Tongue in National Education." He asserts that "the present general state of ignorance concerning our own language, and our indifference to it, is not creditable to those responsible for education in England." There is no answer to the indictment if his own personal experience of a great public school and his information from professional colleagues in secondary schools are normal and correctly stated. He writes:

> I have been told by some schoolmasters of my acquaintance that English grammar is not taught at all in their schools in any shape or form; by others, that only descriptive grammar of the dreariest and most obsolete kind is dealt with; by others, that just enough historical grammar is crammed up during a boy's last year, or even his last term, at school to enable him to scrape through a certain kind of matriculation examination. One schoolmaster, an excellent man, told me that in his experience the English language studies were entrusted to the stupidest, and generally the least competent master in the school.

If this description is anywhere within a measurable distance of the general facts, Prof. Wyld's denunciation is expressed in the mildest of terms.

The Mother Tongue is a very large subject, however; and, in the congested condition of the time-table, as well as in view of the final ends of the teaching, it is necessary, we apprehend, to make some selection of points or aspects, and in any case to lay more stress upon some kinds of English exercises than upon other kinds. Prof. Wyld limits his discussion to the historical aspect, and what he says is well worth consideration. He sets forth "Objects of the Study of the History of English in a School"—seven of them, all "compassable, if the right method is followed, and if the instruction be systematic"; and he outlines a "way of covering the ground." Very well; but then arises the question of comparative values. Without disparaging in the least the philological study of English as an enlightened and enlightening exercise, we have great difficulty in seeing that, for example, "a comparison of Chaucer's vowels with those in present-day English," which (let it be admitted) "will enforce one of the cardinal points of modern method in dealing with the history of language," can be regarded for the vast majority of pupils, as essentially more educative or more useful than the study of the contemned second aorist or the proverbial gerund. On the view necessitated by practical limitations, the historical treatment, however valuable independently, must surely yield place to an aspect of the subject that Prof. Wyld, with fatal modesty, leaves to "others more competent than" himself—"the art of writing good English." The first business of a teacher of English, we repeat—we have said it before, and we shall probably have to say it again—is indicated in these words of Dryden: "to understand the purity of English, and critically to discern not only good writers from bad and a proper style from a corrupt, but also to distinguish that which is pure in a good author from that which is vicious and corrupt in him." The fundamental English exercise, in whatever grade, is practice in composition under discriminating criticism. Everything else is secondary—nay, tertiary.

"In defence—'Nemo me impune lacesset.'" The Scottish Patriotic Association is making its "perfervidum ingenium" felt on the question of the teaching of sound and adequate Scottish history in Scottish schools. Having stirred up the Glasgow and Edinburgh School Boards, and gained over the Convention of Royal Burghs, it attacked the Scottish Education Department, which promptly acknowledged the justice of its cause. Dr. Struthers soon discovered from written examinations that "history as studied in Scottish schools is practically English history from 1066 to 1815"; and, having set the Inspectors on careful inquiry, he found that "the general trend" of their reports was "to confirm the evidence of the written papers, and to show that the whole question merits the thoughtful consideration of managers." "What is wanted—and wanted elsewhere than in Scotland," wrote Dr. Struthers in his annual report on secondary education, "is that the history of our country should be studied, not from an English or a Scottish or an Irish, but from a truly British, point of view." The Department will not interfere with the general discretion of school authorities in the selection of class books; but (writes Dr. Struthers to the Convention of Royal Burghs, November 6, 1906) "they have at present under consideration the question of issuing for the guidance of managers and teachers *suggestions* as to the scope and method of dealing with all the leading subjects of school instruction," in the course of which due consideration will be given to this burning question of perverted and inadequate history. Meantime the Association is circularizing the School Boards "in the interest of historical truth and justice and of sound instruction in the history of the United Kingdom and its component parts." As we have already indicated, the contention of the Association is obviously right; and the amazing thing is that not merely ordinary writers of historical class-books, but even historians of name, should fall under condemnation on plain points of unquestionable historical fact. "Touch not the Thistle bot a glove."

SUMMARY OF THE MONTH.

Mr. Birrell has been appointed Irish Secretary, and Mr. Reginald McKenna has succeeded him as Minister of Education.

Brief reports of a series of important educational meetings are grouped separately on later pages of our present issue.

Mr. Bryce received two deputations at Dublin Castle (January 25), one representing the Presbyterian General Assembly, and the other the Roman Catholic laity, on the subject of University education in Ireland and the Report of the Royal Commission on that subject. He said the Government had decided to create a new college in Dublin University, which would give an opportunity for bringing the youth of the country together in the hours of study. It was proposed to start the new college with a grant sufficient for building and with an annual sum to place it on a proper footing. It was desired to have provision made for bursaries, for scholarships and fellowships, and for those objects aid might come from outside sources. The new college would be entirely free from any kind of

theological test. The Royal University of Dublin would be dissolved, and the University of Dublin would be turned into a National University for Ireland, which would include Trinity College, Dublin, the new college in Dublin, and the colleges in Belfast and Cork.

Some members of Trinity College (writes the Dublin correspondent of the *Morning Post*) are strongly opposed to the establishment of a second college which should be under Roman Catholic influence in the University of Dublin, and it was possibly owing to that opposition that they early put forward a scheme for "expanding" Trinity College by forthwith appointing Roman Catholics to its government, by creating double Chairs in Theology, and by other measures designed to attract Roman Catholic students into Trinity. This scheme was promptly repudiated by the Roman Catholic Archbishop of Dublin, and may, therefore, be taken to be dead, since it would be absurd to propound a solution which the Roman Catholic clerical leaders oppose. The scheme for a second college, which was suggested in evidence before the Robertson Commission, and which has not been repudiated by the Roman Catholic clergy, therefore holds the field as the least injurious measure which can be taken; and, though the weight of evidence given before the recent Commission was against it, I shall not be surprised to hear that such a measure is proposed.

There is reason to believe (writes the *Liverpool Daily Post*) that the visit of the Earl of Aberdeen to Rome has some relation to the Irish University question. It is understood that the Government would not be unwilling to attempt to settle the question of the Catholic University in Ireland, but they know that there would be no use in asking the present Parliament to establish a purely denominational institution. It is quite likely that they may be desirous of ascertaining how the authorities in Rome would be prepared to view a University under lay control without tests or theological chairs, but essentially Catholic in atmosphere.

Quite a sensation (says the Belfast correspondent of the *Daily News*) was caused in Belfast by the publication of Mr. Bryce's statement. It is felt that the Government scheme is the only practical solution of the problem, provided that it is acceptable to the Roman Catholic hierarchy, which is regarded as problematical. The point which will receive the greatest opposition in Ulster will undoubtedly be the abolition of the Royal University, as it would terminate a system whereby the youth of the country who could not afford to attend any college have been able to obtain University degrees and to make their way in professional life.

The Report of the Royal Commission on Trinity College, Dublin, and the University of Dublin is issued as a Blue Book. The conclusions of the Commissioners occupy over twenty pages, and go into the position in minute detail; the chief recommendations are summarized as follows:—"That Trinity College has been and is a satisfactory organ for the higher education of the Protestant Episcopalian population of Ireland, but that it has never been, and is not now, to an extent adequate to the reasonable requirements of the country, an organ for the higher education of the Roman Catholic population." "That, while the Commissioners are divided in opinion in regard to the merits of the various schemes proposed to them involving the creation of a new college in Dublin acceptable to Roman Catholics, they, with one exception, recommend the establishment of such a college in Dublin." "That it is impossible to recommend any such changes in the constitution of Trinity College as would render it acceptable to the Roman Catholic Episcopate." There follow a great many suggestions for the modification of the present arrangements of Trinity College.

The Corporation of the City of London, through one of its committees known as the Irish Society, owns and administers large estates in Ireland. Out of the revenues the Irish Society makes certain annual grants for educational and charitable purposes. Among these is a sum of £225 for establishing scholarships tenable in Trinity College, Dublin. These scholarships are awarded to girl students belonging to Londonderry who obtain the highest marks in the yearly examinations conducted by the Board of Intermediate Education in Ireland. A point of objection is the decision to exclude marks given for proficiency in the Irish language from the total of marks qualifying for the scholarships. The question involved is a somewhat serious one for those girls who take up the study of their native language, because the Intermediate Board allots the same number of marks for Irish that it does for French and German. A girl, therefore, who takes Irish as one of her subjects may lose a large proportion of her qualifying marks and thus be hopelessly left behind in the scholarship competition. The Irish Society was appealed to at its recent visitation of the Irish estates, but it declined to interfere with the discretion of the local Committee. The Roman Catholics of Londonderry, together with a section of the Protestants of the city who take an interest in the study of Irish, now propose to appeal from the decision of the Irish Society to the full Court of Common Council with a request that for Irish girls the Irish language should be held of equal value with French or German from an educational point of view. They say that the action of the local Committee shuts out a large section of the community from the benefit of the scholarship grant.

Candidates for clerkships on the establishment of the Foreign Office and for *attachés*hips in the Diplomatic Service will, after July 1, instead of being examined according to special regulations which have governed these appointments hitherto, be required to take the combined examination for open competitions for the Home Civil Service (Class I.), India Civil Service, and Eastern Cadetships. This decision profoundly modifies the conditions of selection for service in the Foreign Office and the Diplomatic Service. In the past there have been nine obligatory subjects—arithmetic, handwriting and orthography, English composition, *précis*-writing, French, German, general intelligence, geography, and the history of Europe from 1789 to 1880 inclusive. In addition, candidates have been able to offer any two of the following languages, viz., Latin, Italian, Spanish, Portuguese, Russian, Modern Greek, and Arabic. In the examination which such candidates will have to take after July 1 next papers will be set in thirty-two different subjects, from which a selection must be made by the candidate. French and German will be the only obligatory subjects, and candidates will have to reach a high qualifying standard in translation, composition, and oral examination in both these languages. Portuguese, Russian, and Modern Greek are no longer optional languages. The maximum marks to be obtained in each subject are, as a rule, 500 or 600, but 1,200 may be scored in each of the two extensive divisions of mathematics included. Though candidates for the appointments in the Foreign Office and the Diplomatic Service may make a selection from the long list of subjects referred to, the number of papers taken must be such that the maximum of marks that can be obtained for the subjects chosen is limited to 4,000. The exclusion of geography has occasioned much discussion and protest.

Mr. E. B. Sargant, Education Adviser to the High Commissioner of South Africa, read a paper (January 15) before the Royal Colonial Institute on "Federal Tendencies in Education," Sir George Taubman-Goldie in the chair. He said that the first of the federal tendencies in education he desired to emphasize was the growing tendency, especially outside the British Isles themselves, to dwell upon the symbols of a larger national unity. We could not, however, rest permanently content that, while among our kinsmen overseas both legislators and officials were striving hard to create a habit of mind in the young favourable to the ultimate consolidation of our common interests and responsibilities, the same object in the United Kingdom should be left to private associations or to individuals. The interchange of teachers was another federal tendency in education which had also as yet been only partially developed. The flow of teachers had hitherto almost always set from the older to the newer country. A reversal of this flow, or rather a real interchange of teachers between the Homeland and other self-governing British States, even if for short periods, would have much to recommend it, and might in course of time become not unusual. Of no less importance would be an interchange of inspectors of schools, and in one instance—possibly in more—this had actually been accomplished. The advantages did not lie altogether in a mere complete realization by school-children of the conditions of life in other parts of the Empire: each such transfer also tended to break down the barriers formed by ever so slight a difference in manners, and even in pronunciation of our language. In connexion with collegiate education, to his mind the question whether the newer self-governing communities under the Crown should approximate in their growth to the American democracies, or to our own democratic forms of social development, was closely bound up by the type of education which their natural leaders were destined to receive. This type could not be ad-

equately ensured through the public schools and colleges of Great Britain alone. Another federal stimulus in education was the London University in its purely examinational aspect: by its official organization it might increase enormously the usefulness of the proposed Colonial Educational Conference. As to administrative federal tendencies, given a meeting between the Education Adviser to the Viceroy of India, the Education Adviser to the High Commissioner of South Africa, and the suggested Education Adviser for the Crown Colonies, each charged with the duty of reporting to his chief in regard to possible common action in the field of native education, there was reason to think that important common action might follow. By means of the appointment of similar federal education officers in Canada and Australia, the work of any central Bureau of Education which might be established hereafter would be much lightened, and the conclusions to be drawn from the mass of school statistics obtained under a great variety of conditions would be placed upon a sounder basis.

The Lancashire Education Committee has adopted a recommendation that the instruction of pupil-teachers and candidates resident in Wheatley Lane Fence and Newchurch and district be carried out by means of correspondence classes, in connexion with the Normal Correspondence College, London, with the assistance and supervision of the head masters of the schools situated within the districts specified, who shall for this purpose be paid a sum of £3 per annum on account of each student so instructed. A quarterly report of each student's work is to be sent in.

The negotiations for the transference of the training colleges of the Presbyterian Churches in Scotland to the Provisional Committees which will have the training of teachers in their care in future have practically been brought to a successful termination. The buildings in which this work has hitherto been undertaken, both of the Established and United Free Churches, are to be taken over, together with the liabilities upon them, by the new Provincial Committees at a price, it is understood, of between £20,000 and £30,000. The negotiations so far have been through sub-committees, which have to report to the larger bodies; but it is not expected that any further difficulty will be experienced.

The number of students at the German universities (says the *Athenæum*) continues to show a steady increase. According to the recently issued lists, there were 45,136 matriculations in the winter session, as compared with 42,390 in the winter of 1905. Of these 8,188 were at Berlin, 5,567 at Munich, 4,466 at Leipsic, 2,992 at Bonn, 1,831 at Göttingen, 1,744 at Freiburg, 1,652 at Strassburg, 1,603 at Heidelberg, 1,407 at Würzburg, 1,275 at Jena, and 1,140 at Königsberg. The number of students entered for Philology and History is 10,879, whereas thirty years ago there were only 3,874; but the figures are said to include other ill defined subjects. The steadiest increase in numbers during the last thirty years is in Mathematics and Natural Science, which count 6,116, compared with 2,009 in the winter session of 1876–7; and in Law, where there are 12,125, as compared with 4,835 in the earlier returns.

The Paris correspondent of the *Times* reports that M. Briand, the French Minister of Education, proposes to suppress the *baccalauréat*, the degree conferred on a boy on his admission to a French university. Such admission is of necessity preceded by several years' school training, during which the boy is prepared in a somewhat mechanical manner for the examinations on which his admission to the university depends. The system, according to the *Times* correspondent, "is the nearest approach known in Europe to the mandarin method of China." It is very widely felt that at the end of their school careers the boys lack initiative and originality as the result of the undue appeal to their verbal memories, and it is hoped that the abolition of the *baccalauréat* will discourage the rigid uniformity which characterizes French secondary schools, and lead to an endeavour to adapt the curriculum of a school to the particular needs of the pupils attending it.

We regret to announce the death of the Rev. William Haig-Brown, LL.D., Master of the Charterhouse, at the age of eighty-three years. A remarkable personality has been taken from the scholastic world. His strongly marked and self-reliant character, seasoned with more than a grain of shrewd humour, left a deep and enduring impression on his pupils, whose awe for the Head Master closer contact would tinge with affectionate regard. But outside the circle of those who came in contact with him he will be best remembered, not with Arnold or Thring, as a revolutionizer of the aims and methods of education, but rather as the pioneer of the movement to carry away the City schools to country or suburbs. Looking at his work from a strictly educational point of view (says the *Times*), it was somewhat of an anomaly that a man of such wide culture apparently did not feel the modern impulse towards broadening the basis of a liberal education. An elegant scholar of the older school and a facile writer of Latin verse, he was content to follow the traditional lines of classical study. He was widely acquainted with English literature; yet made little provision for teaching it regularly in the school. He was an admirable German and French linguist; as President of the Société des Professeurs de Français en Angleterre, he delivered his address in French, and to his connexion with the Society he owed his appointment as Officier d'Académie in 1882 and Officier de l'Instruction Publique in 1900. Yet he devised no scheme for making the modern language teaching effective throughout the school. He was not in touch with either natural science or with the arts and crafts as educational agents. In all departments, indeed, while giving his subordinates an unusually free hand, he was content to leave the educational machine without systematic co-ordination of its parts to a definite end. In part, it must be admitted, Dr. Haig-Brown's method was rooted in the old classical tradition in which he had been trained and had successfully trained others so long.

UNIVERSITIES AND COLLEGES.

(*From our own Correspondent.*)

Cambridge. The news of Prof. Maitland's death reached England too late to be mentioned in these notes last month. Other pens have borne testimony to the labours and learning of our departed friend, but the writer of these notes cannot let this opportunity pass without saying one word of personal appreciation. Dr. Maitland was known to the outside world as a patient, accurate, and erudite scholar; he was known to a smaller circle as one of the most delightful of companions, the stanchest of friends, and the most straightforward of men. His keen sense of humour could enlighten the dullest subject, and he could treat the driest of themes in a way which gripped the attention of the hearer or reader. It was only shortly before his fatal illness that he read one of his typical papers before the Cambridge Law Club, and the blend of wit and wisdom was of the class that few men living could produce. A memorial service was held at Trinity on January 24, and was unusually impressive.

The beginning of the term has seen the calm of the undergraduate mind disturbed by a fire which threatened the existence of the Pitt Club. The billiard rooms in Jesus Lane, over which part of the Pitt Club extends, were found to be on fire at 3 o'clock on the morning of January 25, and the result was the total destruction of the premises. The Club building itself fortunately was preserved, but the annexe, consisting of dining room and kitchen, was soon a thing of the past. The inhabitants of the two adjoining houses had a very anxious time of it for an hour or two, but eventually the Fire Brigade, with some willing helpers, confined the fire to the premises where it broke out. The University possesses a syndicate for the protection of our buildings against fire, but the arrangements to meet a sudden conflagration are absolutely inadequate. Fire drill, except at the ladies' colleges, is unknown, and the means for detecting incipient fires practically non-existent. When we have lost our precious Library or some historical and valued building we shall wake up.

Fly-sheets are in the air, and the mathematical field day comes off on February 1. Hitherto the defect in the conduct of the controversy has been that neither side has put plainly before the voters the actual facts of the scheme or of the present system. It is not every one who sees the *University Reporter* or follows the history of an intricate question like the one now being discussed.

Two elections to Professorships will take place in February: the Lady Margaret Professorship is to be filled on February 27, and the Downing Professorship of the Laws of England on

February 9. For the former Mr. J. P. Whitney, of King's, and Mr. McNeile, of Sidney, are mentioned as possible candidates. The appointment of either would strengthen the Professorate.

We are taking steps to institute a diploma in Architecture, and the syndicate appointed to advise the Senate has been chosen with much discretion, containing such names as Mr. W. D. Caröe, Mr. D. H. S. Cranage, and Mr. Walter Morley Fletcher.

In this connexion it may be mentioned that it is proposed to establish a permanent syndicate to settle all matters relating to sites for building purposes. The University has acquired at a great cost valuable building ground, and it would be a thousand pities if due precautions were not taken to prevent the land being developed to the detriment of our academic posterity.

As these notes are being penned the country is in the grip of rigid frost, and our footballers find their occupation gone. Two of our team are lost to us—Scoular, the Scotch International, through an injury, and J. V. Young, who finds that the sister University alone can provide him with the training in forestry which is necessary for his career as an Indian official.

The Eight promises to be quite up to the average, but practice is being carried on under somewhat adverse conditions.

The boat races will probably take place on June 5 to 8 inclusive, and most of the May Week festivities are fixed for the week beginning June 10. Country cousins please take notice.

London—University College.

The annual report of the Council shows that the number of students in 1905-6 was 1,396. Of these 242 belonged to the Faculty of Medicine, 1,020 to the Faculties of Arts and Laws and of Science, and 134 were Post-graduate and research students. There were 468 internal students of the University of London. There were, besides, about 800 persons attending "Public" and "Special" courses. The fees received in all the Faculties of the College amounted to £22,823, an increase of over £2,600 on the previous session. The financial statements show that the income exceeded the expenditure by £126 and that the Treasury grant amounted to £10,000. The general finances of the College are shown to be in a healthy condition. In addition to the ordinary scholarships for undergraduates, there were during the past session 10 scholarships or studentships awarded for the purposes of research. Eight University Scholarships were obtained by students of the College, including the Neil Arnott, the Derby, and two Gilchrist. Ninety-seven students graduated at the University of London, of whom 13 obtained higher degrees. The report contains also a summary of the research work of the past session.

Birmingham.

The Council have invited the following gentlemen to form an Advisory Board of Business Men to co-operate with the Professors in the Faculty of Commerce:—Mr. Neville Chamberlain, Mr. G. H. Claughton, Mr. F. D. Docker, Mr. A. H. Gibson, Mr. Edward Hickman, Mr. W. E. Hipkins, Mr. J. S. Taylor, and Mr. T. Sidney Walker. All the members of the new Board hold prominent positions in the management of some of the largest Birmingham companies. The Board has been created for two years only, as an experiment, first, to make suggestions upon the training of students for business careers, and, second, to bring the Faculty and the graduates produced by its aid before the notice of the business world.

Edinburgh.

The annual report for 1906 states that during the year the total number of matriculated students (including 463 women) was 3,199, being the highest number reached for thirteen years. Of this number 1,012 (including 401 women) were enrolled in the Faculty of Arts, 292 (including 11 women) in the Faculty of Science, 56 in the Faculty of Divinity, 311 in the Faculty of Law, 1,500 (including 35 women) in the Faculty of Medicine, and 28 (including 16 women) in the Faculty of Music. Of the students of Medicine 681, or over 45 per cent., belonged to Scotland; 301, or 20 per cent., were from England and Wales; 136 from Ireland; 82 from India; 272, or over 18 per cent., from British colonies; and 28 from foreign countries. The number of women attending extra-academical lectures with a view to graduation in Medicine in the University was 71. The following degrees were conferred during 1906:—Master of Arts (M.A.), 162 (including 46 women); Doctor of Philosophy (D.Phil.), 1; Doctor of Literature (D.Litt.), 1; Bachelor of Science (B.Sc.), 42; Doctor of Science (D.Sc.), 5; Bachelor of Divinity (B.D.), 6; Bachelor of Law (B.L.), 1; Bachelor of Laws (LL.B.), 14; Bachelor of Medicine and Master of Surgery (M.B., C.M.), 1; Bachelor of Medicine and Bachelor of Surgery (M.B., Ch.B.), 186 (including 17 women); Doctor of Medicine (M.D.), 90 (including 2 women); Master of Surgery (Ch.M.), 1; Mus.B., 1. The General Council of the University now numbers 10,086. The Schoolmaster's Diploma was conferred on 36 candidates—the higher on 20 (11 of whom were women); the ordinary on 16 (11 of whom were women). The Diploma in Tropical Medicine and Hygiene was conferred on 5 candidates. The Special Certificate in Diseases of Tropical Climates was conferred on 60 candidates (including 8 women). The total annual value of the University fellowships, scholarships, bursaries, and prizes now amounts to about £18,520. Although the Carnegie Foundation has not so far effected a manifest increase in the number of students, it continues to be noticeable that many who avail themselves of the section of the scheme which provides for the payment of class fees take out a larger number of classes than they would probably otherwise have done.

COLLEGE OF PRECEPTORS.

HALF-YEARLY GENERAL MEETING.

The ordinary half-yearly General Meeting of the members of the Corporation was held at the College on Saturday, January 26.

The Secretary having read the advertisement convening the meeting, Dr. Wormell was appointed Chairman.

The Report of the Council was laid before the meeting, and was taken as read, a copy having previously been sent to every member. It was as follows:—

Report of the Council.

The Council beg to lay before the members of the College the following Report of their proceedings during the past half-year:—

1. The Thirty-fourth Annual Series of Lectures to Teachers commenced on the 15th of February and ended on the 13th of December. It consisted of a Course of Twelve Lectures on "The Psychological Bases of Teaching and Education," by Prof. J. Adams, M.A., B.Sc., F.C.P., and the following short Courses, of four Lectures each, on the Practice of Education, viz.:—(1) "Method and Class Management," by T. Raymont, M.A.; (2) "The Teaching of the English Language and Literature" and (3) "The Teaching of History," by Prof. J. W. Adamson, B.A.; (4) "The Teaching of Geography," by Prof. L. W. Lyde, M.A.; (5) "The Study of Speech Sounds," by Prof. W. Rippmann, M.A.; (6) "The Teaching of Arithmetic and Algebra," by W. H. Wagstaff, M.A.; and (7) "The Teaching of Geometry," by J. G. Hamilton, B.A. These Lectures have been attended in all by 95 students.

2. At the Summer Examination of Teachers for the College Diplomas, which was held in the first week in September, the number of candidates who presented themselves was 376; while for the Christmas Examination, to be held in the first week in January, 630 candidates have entered—the same number as at the corresponding Examination last year. During the past half-year the Diploma of Licentiate has been conferred on 28 candidates, and that of Associate on 100, who had satisfied the prescribed conditions.

3. For the Christmas Certificate and Lower Forms Examinations, which were held in the first week in December, the number of entries was 7,455, as compared with 8,276 who were entered for the corresponding Examination last year. The Professional Preliminary Examination for Certificates recognized by the Board of Education and a number of professional bodies was held, as usual, in the first week in September, and was attended by 251 candidates, as compared with 238 who attended the corresponding Examination last year.

4. The Council have conducted during the past half-year the Examination of 5 Schools by Visiting Examiners.

5. At the Members' Meetings held during the past half-year the following Lectures have been given:—"On Proposed International Languages," by James Blaikie, M.A.; "On School Discipline," by J. L. Paton, M.A. Reports of these Lectures have been published, as usual, in *The Educational Times*.

6. During the past twelve months about 1,800 volumes have been issued to members. The Council have recently purchased a number of works of reference and other books for the Library. A list of these additions will be published in the February number of *The Educational Times*.

7. During the past half-year 14 new members have been elected,

notice has been received of the withdrawal of 5, and 8 have been removed from the list on account of non-payment of their subscriptions. The Council regret to have to report the death of the following members:—Mr. J. P. Bidlake, F.C.P.; Mrs. W. Grey; Mr. J. Kennard; Miss E. R. Peckston, A.C.P.; Rev. O. T. Thorpe; and Mr. M. H. Woodall, A.C.P.

8. The Council have been enabled, out of the surplus income accruing from the regular operations of the College during the past year, to apply the sum of £67 to the purchase of books for the Library, and to place the sum of £500 to the credit of the Reserve Fund, in accordance with the resolution passed at the last General Meeting.

9. The Council regret that, owing to the abandonment of the Education Bill, the Teachers' Register has not yet been placed on a satisfactory basis. It was shown, however, in the course of the debate in the House of Lords, that the Government are willing to authorize the establishment of a single-column Register, which should include teachers of all sections. It may be hoped, therefore, that arrangements will be made for a satisfactory reconstruction of the Register.

10. In accordance with the wish of the members of the College, as expressed in a resolution which was adopted at the last half-yearly General Meeting, the Council in September last appointed three representatives to serve on the Federal Council of Secondary School Associations. The Federal Council now includes representatives of the Head Masters' Association, the Head Mistresses' Association, the Assistant Masters' Association, the Assistant Mistresses' Association, the Private Schools Association, the Preparatory Schools Association, and the College of Preceptors. The Head Masters' Conference at their last meeting accepted the principle of federation, and referred to their Committee the question of subscription and the choice of representatives. Four meetings of the Federal Council have already been held. At these meetings important matters have been discussed, and resolutions have been passed which have been communicated to the Board of Education and to other bodies.

Mr. Gutteridge, in reference to paragraph 2, remarked on the rarity of the award of the Fellowship of the College as compared with the award of diplomas of the lower grades, and suggested the desirability of the Council considering whether some modifications of the stringency of the regulations might not encourage candidates to compete for the highest grade.

The Dean remarked that there had been ten entries for the Fellowship grade at the recent examination.

With reference to paragraph 3, Mr. Morgan suggested that it would conduce to the popularity of the examinations if local committees were established in all parts of the country, who might take personal interest in the conduct of the examinations, and assist the presiding examiner in the discharge of the duties entrusted to him. Such committees might also arrange for the collection of funds for the award of local prizes, and otherwise increase the influence of the College.

The Dean was inclined to attribute the falling off in the number of candidates partly to the action of the Board of Education in prohibiting the entry of pupils of schools aided by the Board for external examinations until they had completed the second year of the school course. With regard to the suggestion of local assistance to superintendents of examinations, he might observe that experience had shown the inconvenience of any interference with the authority of those who had been made responsible for the carrying out of the regulations, and the rules of the College absolutely forbade any such division of authority.

The Report of the Council, with the accompanying abstract of accounts, was then adopted.

The Dean presented his Report, which was as follows:—

The Dean's Report.

In addition to the general statement of the examination work of the College during the past half-year, which has been embodied in the Report of the Council, I have now to submit to you, in detail, the statistics and results of the various examinations.

The Christmas Examination of candidates for Certificates took place on the 4th to the 8th of December at 204 Local Centres and Schools. In the United Kingdom the Examination was held at the following places:—Aldershot, Alton, Arnside, Ashbourne, Ashton-in-Makerfield, Aylesbury, Banbury, Bath, Bewdley, Bideford, Biggleswade, Birmingham, Blackpool, Bognor, Bournemouth, Bracknell, Braunton, Brentwood, Brighton, Bristol, Broadstairs, Budleigh Salterton, Cardiff, Carlisle, Carmarthen, Cheltenham, Chepstow, Chertsey, Chiswick, Clapham, Clevedon, Coalbrookdale, Colchester, Coleford, Congleton, Cowes, Crewe, Croydon, Derby, Devizes, Doncaster, Drax, Dublin, Durham, Ealing, Eastbourne, Edinburgh, Evesham, Exeter, Fareham, Folkestone, Frome, Grantham, Gravesend, Greenwich, Hanley Castle, Harlow, Harrogate, Hastings, Hayle, Hereford, Holsworthy, Hull, Hutton (Preston), Inverurie, Jersey, Kibworth, King's Lynn, Kingston-on-Thames, Kirkby Stephen, Leeds, Lincoln, Liskeard, Liverpool, Llandudno, London, Longton, Long Sutton, Loughton, Maidstone, Manchester, Margate, Marlborough, Morecambe, New Brighton, Newcastle-on-Tyne, Newport (Mon.), Newton Abbot, Northampton, Norwich, Nottingham, Ongar, Penketh, Plymouth, Portsea, Portsmouth, Reading, Richmond-on-Thames, Ripley (Surrey), Romford, Saham, St. Anne's, St. Austell, St. Leonards-on-Sea, Sale, Sandwich, Scarborough, Scorton, Sheffield, Shirley, Shoreham, Southampton, Southend, South Molton, Southport, Southsea, Southwold-on-Sea, Spilsby, Stamford (Lincs), Stoke-on-Trent, Stokesley, Sunderland, Tamworth, Taunton, Torquay, Wallington, Walton (Liverpool), Wellingborough, Wellington (Salop), Wells (Somerset), Welshpool, West Norwood, Weston-super-Mare, Weymouth, Wimbledon, Winchester, Winslow, Wisbech, Woking, Worcester, Workington, Worthing, Yarmouth, and York. The Examination was also held at Batticaloa and Colombo (Ceylon), Stewart Town (Jamaica); Georgetown (British Guiana); St. George's (Grenada); St. Lucia and St. Vincent (B.W.I.); Port of Spain and Tunapuna (Trinidad); Bloemfontein, Cala, Irene, Johannesburg, Klerksdorp, Lydenburg, Oakford, Port Elizabeth, Potchefstroom, Pretoria, Uitenhage, and Umzinto (S. Africa); Freetown (Sierra Leone); Lagos; Rangoon (Burma); Mussooree (India); and Lomas de Zamora (Argentine Republic).

The total number of candidates examined (not including 483 examined at Colonial and Foreign Centres) was 4,688, of whom 3,181 were boys and 1,507 girls.

Taking the Christmas and Midsummer Examinations together, the total number of candidates examined for Certificates during the year (not including those who attended the Supplementary Examinations in March and September) was 9,538.

The following table shows the proportion of the candidates at the recent Examination who passed in the class for which they were entered:—

	Entered.	Passed.	Percentage.
First Class (or Senior)	411	183	45
Second Class (or Junior)	1,858	986	53
Third Class	2,054	1,669	81

The above table does not take account of those candidates who obtained Certificates of a lower class than that for which they were entered, nor of those (365 in number) who entered only for certain subjects required for professional preliminary purposes.

The number of candidates entered for the Lower Forms Examination (not including 351 examined at Colonial and Foreign Centres) was 1,742—963 boys and 779 girls. Of these 1,476 passed, or 85 per cent.

At the supplementary Examination for First and Second Class Certificates, which was held on the 4th to 6th of September in London and at the following Provincial Centres, viz., Birmingham, Bristol, Leeds, Liverpool, and Manchester, 251 candidates presented themselves. The number of candidates examined at these supplementary Examinations during the year was 629.

The Summer Examination of Teachers for the College Diplomas took place on the 27th of August and five following days in London and at the following Local Centres:—Belfast, Birmingham, Bristol, Colchester, Leeds, Liverpool, Manchester, Newcastle-on-Tyne, Plymouth, South Molton, West Hartlepool; and at Barcelona; Calcutta, Jharipani, Lahore, and Simla (India); Robertson (South Africa); and Oyo (West Africa). It was attended by 376 candidates—214 men and 162 women. On the results of this Examination, 28 candidates obtained the Diploma of Licentiate, and 100 that of Associate.

The Christmas Examination of Teachers for the College Diplomas took place on the 31st of December and five following days in London and at the following Local Centres:—Belfast, Birmingham, Bristol, Graiguenamanagh, Guernsey, Leeds, Liverpool, Manchester, Newcastle-on-Tyne, Plymouth, South Molton; and at Ahmedabab and Jharipani (India); Boshof, Cape Town, and East London (South Africa); Hong Kong; and Georgetown (British Guiana). It was attended by 609 candidates—350 men and 259 women.

Practical Examinations to test Ability to Teach were held in February, May, and October. At these Examinations 26 candidates presented themselves. Of these 21 obtained Certificates, and 1 satisfied the conditions prescribed by the Teachers' Registration Council for candidates applying under Reg. 5 (2) (*b*).

The number of schools examined and inspected during the year under the Visiting Examination and Inspection Schemes (A), (B), and (C) was 12.

The Report was adopted.

The meeting then proceeded to the election of twelve members of the Council to fill the places of the twelve retiring by rotation and three auditors.

The Chairman having appointed Mr. Chandler and Mr.

Walters to act as scrutators, the voting papers were distributed, and the election was proceeded with. On the scrutators presenting their report, the following were declared to be duly elected :—

Members of the Council.

S. Barlet, B.-ès-Sc., 97 St. Mark's Road, North Kensington.
H. Baumann, M.A., F.C.P., 38 Guildford Road, Brighton.
E. A. Butler, B.A., B.Sc., Tollington Schools, N.
H. Chettle, M.A., Stationers' School, N.
J. L. Holland, B.A., L.C.P., 72 Kingsley Park Terrace, Northampton.
W. W. Kelland, M.A., Oakfield School, Crouch End, N.
G. T. Moody, D.Sc., Lorne House, North Dulwich, S.E.
E. E. Pinches, B.A., F.C.P., 1 Nevern Road, South Kensington.
Miss M. Punnett, B.A., 3 Carlingford Road, Hampstead, N.W.
F. Storr, B.A., 40 Mecklenburgh Square, W.C.
Rev. J. Twentyman, M.A., Ingoldsby Rectory, Grantham.
T. S. White, B.A., Paradise House, Clissold Park, N.

Auditors.

J. Bell, LL.D., M.A., 4 Beatrice Avenue, Norbury, S.W.
W. C. Brown, M.A., F C.P., Tollington Schools, Muswell Hill, N.
A. E. C. Dickinson, M.A., LL.D., L.C.P., Grove House, Highgate.

A vote of thanks to the Chairman concluded the proceedings.

In the evening fifty-five members and friends of the College dined together at the Hôtel Cecil under the presidency of Dr. Wormell. The company included Prof. Adams, Miss Allworthy, Mr. Atkinson, Mr. Bain, Mr. Barlet, Rev. Canon Bell, Dr. J. Bell, Rev. J. B. Blomfield, Mr. and Mrs. W. Campbell Brown, Mr. E. A. Butler, Mr. F. Butler, Mr. Chalmers, Mr., Mrs. and Miss Charles, Mrs. le Chavetois, Mr. Chinnappa, Rev. A. J. Church, Dr. Dickinson, Mr. and Miss Eve, Mr. and Mrs. Fox, Miss Glünicke, Mr. Hawe, Mr., Mrs. and Miss Hodgson, Prof. Jackson, Mr. Johnson, Mr. Kelland, Dr., Mrs. and Miss Maples, Mr. Mardling, Mr. Marx, Mr. Milne, Dr. Moody, Prof. Murison, Mr., Mrs. and Miss Musson, Mr. Nicol, Mr. Oldfield, Mr. Rushbrooke, Dr. Armitage Smith, Dr. Spenser, Mr. Starbuck, Mr. White, Mr. C. E. Williams, Mr. Eric Williams, and Mr. and Miss Wilson. Mr. Edward Pinches, who was unable to be present, sent a telegram expressing hearty wishes for the success of the meeting. Canon Bell proposed the toast of "The College of Preceptors," which was responded to by the Chairman, and Mr. Eve proposed the toast of "The Visitors," which was responded to by Dr. Spenser. The speeches alternated with songs and recitations by Miss Hodgson, Dr. Dickinson, and Mr. Eric Williams.

ADJOURNED MEETING OF THE COUNCIL OF THE COLLEGE OF PRECEPTORS.

An adjourned meeting of the Council was held on January 26. Present: Mr. E. A. Butler, Vice-President, in the chair; Prof. Adams, Dr. Armitage Smith, Mr. Barlet, Rev. A. W. Boulden, Mr. J. L. Butler, Miss Dawes, Mr. Easterbrook, Mr. Eve, Mr. Hawe, Mr. Kelland, Dr. Maples, Dr. Moody, Mr. Morgan, Mr. Rushbrooke, Mr. Starbuck, Mr. Storr, and Mr. White.

The Secretary reported that the Christmas Examination for Diplomas had been held on December 31–January 5, and had been attended by 609 candidates. The names of those entitled to Diplomas would be submitted to the Council at their next meeting.

COLLEGE OF PRECEPTORS.

LIST OF BOOKS RECENTLY PURCHASED FOR THE LIBRARY.

Alembic Club Reprints :—
- No. 1. Experiments upon Magnesia Alba, Quicklime, and some other Alkaline Substances. By J. Black (1755).
- No. 2. Foundations of the Atomic Theory. Papers, &c., by J. Dalton, W. H. Wollaston, and J. Thomson (1802–1808).
- No. 3. Experiments on Air. Papers by the Hon. H. Cavendish (1784–1785).
- No. 4. Foundations of the Molecular Theory. Papers, &c., by J. Dalton, J. L. Gay-Lussac, and A. Avogadro (1808–1811).
- No. 5. Extracts from Micrographia. By R. Hooke (1665).
- No. 6. The Decomposition of the Fixed Alkalies and Alkaline Earths. By Humphry Davy (1807–1808).
- No. 7. The Discovery of Oxygen, Part I. By J. Priestley (1775).
- No. 8. The Discovery of Oxygen, Part II. By C. W. Scheele (1777).
- No. 9. The Elementary Nature of Chlorine. Paper by Humphry Davy (1809–1818).
- No. 10. Researches on the Arseniates, Phosphates, and Modifications of Phosphoric Acid. By T. Graham (1833).
- No. 11. The Increase in Weight of Tin and Lead on Calcination. By J. Key (1630).
- No. 12. The Liquefaction of Gases. Paper by Michael Faraday (1823–1845). With an Appendix consisting of Papers by T. Northmore on the Compression of Gases (1805–1806).
- No. 13. The Early History of Chlorine. Papers by C. W. Scheele (1774), C. L. Berthollet (1785), G. de Morveau (1787), J. L. Gay-Lussac and L. J. Thenard (1809).
- No. 14. Researches on the Molecular Asymmetry of Natural Organic Products. By L. Pasteur (1860).
- No. 15. The Electrolysis of Organic Compounds. Papers by H. Kolbe (1845–1868).
- No. 16. Papers on Etherification and on the Constitution of Salts. By A. W. Williamson (1850–1856).

Alexandrow, A., Complete English-Russian Dictionary.
,, Complete Russian-English Dictionary.
Armitage, F. P., A History of Chemistry.
Armstrong, H. E., The Teaching of Scientific Method, and other papers on Education.
Arnold, Sir Edwin, The Light of Asia.
Avebury, Lord, Notes on the Life History of British Flowering Plants.
,, Scientific Lectures.
,, The Scenery of England, and the Causes to which it is due.
,, The Scenery of Switzerland, and the Causes to which it is due.
Bagehot, W., Lombard Street: a Description of the Money Market.
Baker, W. M., Algebraic Geometry: a New Treatise on Analytical Conic Sections.
Ball, W. W. R., A Short Account of the History of Mathematics.
Beddard, F. E., Natural History in Zoological Gardens.
Bessemer, Sir Henry, An Autobiography.
Bonney, T. G., Ice-Work, Past and Present.
Bourne, H. E., The Teaching of History and Civics in the Elementary and the Secondary School.
Browning, E. B., Poetical Works.
Burns, Robert, Works. Edited by A. Smith.
Byron, Poetical Works.
Cambridge Natural History. Edited by S. F. Harmer and A. E. Shipley :—
- Vol. I. Protozoa, by M. Harley; Porifera (Sponges), by I. B. J. Sollas; Coelenterata and Ctenophora, by S. J. Hickson; Echinodermata, by E. W. MacBride.
- Vol. II. Flatworms and Mesozoa, by F. W. Gamble; Nemertines, by L. Sheldon; Thread-Worms and Sagitta, by A. E. Shipley; Rotifers, by M. Hartog; Polychaet Worms, by W. B. Benham; Earthworms and Leeches, by F. E. Beddard; Gephyrea and Phoronis, by A. E. Shipley; Polyzoa, by S. F. Harmer.
- Vol. III. Molluscs, by A. H. Cooke; Brachiopods (Recent), by A. E. Shipley; Brachiopods (Fossils), by F. R. C. Reed.
- Vol. V. Peripatus, by A. Sedgwick; Myriapods, by F. G. Sinclair; Insects, Part I., by D. Sharp.
- Vol. VI. Insects, Part II., by D. Sharp.
- Vol. VII. Hemichordata, by S. F. Harmer; Ascidians and Amphioxus, by W. A. Herdman; Fishes (Exclusive of the Systematic Account of Teleostei), by T. W. Bridge; Fishes (Systematic Account of Teleostei), by G. A. Boulenger.
- Vol. VIII. Amphibia and Reptiles, by H. Gadow.
- Vol. IX. Birds, by A. H. Evans.
- Vol. X. Mammalia, by F. E. Beddard.

(*Vol. IV. will be added as soon as it is published.*)

Coleridge, Poetical Works.
Davis, J. R. Ainsworth, The Natural History of Animals. 8 vols.
Dow, A. W., Composition (Drawing).
Dryden, Poetical Works. Edited by W. D. Christie.
Ewing, J. A., Magnetic Induction in Iron and other Metals.
Fabre, J. H., Insect Life. Translated into English.
Foster, G. C., and Porter, A. W., Elementary Treatise on Electricity and Magnetism.
Geikie, A., Text Book of Geology. 2 vols.
,, The Scenery of Scotland viewed in connexion with its Physical Geology.
Geographical Journal. Vol. XXVIII.

Geographical Journal. Index to Vols. I.-XX.
Gide, C., Principles of Political Economy. Second English Edition. Translated by C. W. A. Veditz.
Gosse, E., Seventeenth Century Studies: a Contribution to the History of English Poetry.
Green, J. A., The Educational Ideas of Pestalozzi.
Hall, A. D., The Book of the Rothamsted Experiments.
Hall, G. S., Adolescence: its Psychology. 2 vols.
Helmholtz, H. L. F., On the Sensations of Tone as a Physiological Basis for the Theory of Music. Translated by A. J. Ellis.
Hooker, J. D., The Student's Flora of the British Islands.
Huxley, T. H., Scientific Memoirs of. Edited by Sir Michael Foster and Prof. E. Ray Lankester. 5 vols.
Jeans, W. T., Lives of the Electricians: Professors Tyndall, Wheatstone, and Morse. First Series.
Keats, Poetical Works. Edited by W. S. Scott.
Keynes, J. N., Studies and Exercises in Formal Logic.
,, The Scope and Method of Political Economy.
Kingsley, C., Scientific Lectures and Essays.
Lankester, E. Ray, Extinct Animals.
Latter, O. H., The Natural History of some Common Animals.
Lightfoot, J., Graphic Algebra.
Lockyer, Sir Norman, Inorganic Evolution as studied by Spectrum Analysis.
Logan, J., Arithmetical Wrinkles.
Meldola, R., The Chemistry of Photography.
Mellone, S. H., An Introductory Text Book of Logic.
Menpes, M., Japan: a Record in Colour. Transcribed by D. Menpes.
Meyer, E. von, A History of Chemistry. Translated by G. McGowan.
Miall, L. C., Round the Year: a Series of Short Nature-Studies.
,, The Natural History of Aquatic Insects.
Monier-Williams, Sir M., Sanskrit-English Dictionary.
Monroe, P., A Text Book in the History of Education.
Morris, W., The Earthly Paradise.
Nicholson, J. S., Elements of Political Economy.
Peckham, G. W. and E. G., Wasps, Social and Solitary.
Pfeffer, W., The Physiology of Plants. Translated and Edited by A. J. Ewart. 3 vols.
Picton, H. W., The Story of Chemistry.
Poynting, J. H., and Thomson, J. J., A Text Book of Physics. Vol. I. Properties of Matter. Vol. II., Sound. Vol. III., Heat.
(*Vols. IV. and V. will be added as soon as they are published.*)
Price, L. L., A Short History of Political Economy in England.
Raleigh, W., The English Novel.
Ramsay, Sir W., The Gases of the Atmosphere: the History of their Discovery.
Rayleigh, Lord, Scientific Papers (1869–1901). 4 vols.
Raymont, T., The Principles of Education.
Read, Carveth, Logic, Deductive and Inductive.
Richter, V. von, Organic Chemistry. Edited by Prof. R. Anschütz. Translated by E. F. Smith. Vol. I., Chemistry of the Aliphatic Series. Vol. II., Carbocyclic and Heterocyclic Series.
Roscoe, Sir H. E., John Dalton and the Rise of Modern Chemistry.
Schäfer, E A., Directions for Class Work in Practical Physiology.
Schützenberger, P., On Fermentation.
Shelley, Poetical Works. Edited by T. Hutchinson.
Sidgwick, H., The Methods of Ethics.
Simmons, A. T., and Stenhouse, E., Science of Common Life.
Smiles, S., Lives of the Engineers:—
Vol. I. Vermuyden, Myddelton, Perry, James Brindley (Early Engineering).
Vol. II. Smeaton and Rennie (Harbours, Lighthouses, Bridges).
Vol. III. Metcalfe, Telford (History of Roads).
Vol. IV. Boulton and Watt (The Steam-Engine).
Vol. V. George and Robert Stephenson (The Locomotive).
Smith, A., and Hall, E. H., The Teaching of Chemistry and Physics in the Secondary School.
Spenser, Works. Edited by R. Morris.
Suess, E., The Face of the Earth. Translated into English by H. B. C. Sollas. 2 vols.
(*Vol. III. will be added as soon as it is published.*)
Thompson, S. P., Michael Faraday: his Life and Work.
Thorpe, T. E., Essays in Historical Chemistry.
Tyndall, J., The Forms of Water in Clouds and Rivers, Ice and Glaciers.
Vallery-Radot, R., Life of Pasteur. Translated from the French by Mrs. R. L. Devonshire. 2 vols.
Warner, G. T., Landmarks in English Industrial History.
Watson, W., A Text Book of Physics.
Welton, J., Principles and Methods of Teaching.
Whetham, W. C. D., The Recent Development of Physical Science.
White, J., The Educational Ideas of Froebel.
Wordsworth, Poetical Works. Edited by T. Hutchinson.

SCOTTISH UNIVERSITY REFORM.

It would be well, writes Mr. A. F. Giles, M.A. Edin., of Balliol College, Oxford, in the *Scottish Review*, that the problems of university reform should be made specially prominent in the eye of the Scottish people at this time. There is talk of some early project of legislation on the subject, and for this the way ought to be prepared in the public mind, in order that the matter may be recognized in its true importance, and that the coming opportunity of increasing the life and freedom of the universities may be wisely used. To this end, discussion is needed. We in Scotland must inform ourselves what it is that we want, and be prepared to give an intelligent criticism of any measures that may be propounded. The question is a complex one, containing difficulties of government, of teaching organization, of financial and personal equipment, of discipline, of social life. In framing a policy of reform we have to take account of all these, and remember, also, the forces already at work and the direction in which natural internal development has been tending.

The first evident need is to cut the universities free from the restriction which, under the Act of 1889, compels them, if they move at all, to move in a body. Any measure of reform which is suggested by one of the four university courts—of St. Andrews, Glasgow, Aberdeen, and Edinburgh—must receive the approval of the other three before it can be put in practice. At the best this implies long delay; at the worst—and very often—it makes the way of progress impassable. Each of the universities has its special character, its special opportunities and needs. And so we have a team of four pulling in different directions, unequally yoked in respect of size and strength. The ordinance which tied this uncomfortable harness was probably designed for an economy of energy among the four, each complementing the others; but this purpose, which might have been served by a national Scottish university consisting of four university colleges, has been largely defeated. At any rate, whatever good was to be gained by the union has now passed away, and it is time to set each university free to go her own way.

In the next place, internal organization must be looked to. The governing bodies—the university courts, which hold the ultimate financial control—besides being hampered by the restriction already discussed are not in themselves happily constituted. The court represents a variety of interests—the professorial staff of the university, the general council or body of graduates, the municipality, the students (represented by their Lord Rector, who is chairman, and himself also appoints an assessor), and sundry other public bodies. The result is a difference in degrees of knowledge of the university from within. Unity of policy is difficult to attain, and at times there appears a certain lack of sympathy with the needs of students. It seems needful that the court should be so reformed in constitution as to be more closely in touch with Scottish education in general, and with the life of the university itself.

The divisions of the academic year are admitted to be unsatisfactory; indeed, the present arrangement of terms is a mark of transition. In the old days many men depended on the summer to supply themselves with funds for their winter's residence at college. During the summer months they were wage-earners, engaged upon tasks apart from their academic studies. But this condition of things has almost wholly passed away. In the Medical Faculties the summer sessions are fully attended, and indeed are necessary parts of the curriculum; but in Arts a student has the *option* of spending his summer at the university. He comes up, after a hard first winter, and finds, it is true, many opportunities for more leisurely work and the diversions of the season; but the university's life in these months is too relaxed and casual, and many a man has found it hard to settle down again to the labour of the winter. The arrangement, in fact, is a mere half-way house between two systems—the old one, and the proposed fully equipped and *compulsory* summer's work *at the university*.

What is wanted, then, is a more even distribution of pressure over the whole year, and this must be made by raising the summer's studies to the same level with those of the winter. There are, as I understand, two distinct schemes for accomplishing this end. There is, first, the *three-term session*, on the English plan, by which the studies of the two winter terms are continued in a summer term. Courses might be arranged to last over all three terms, or else might be confined each within the limits of one, and correspondingly increased in number. In either case the three terms would be equal in importance, the lectures and other work of each in the hands of the full pro-

fessorial staff. It is objected that such an arrangement would fail of approval from the professors, whose work in many cases is ended with the end of the winter, and who have the whole summer free for literary labours and golf. But I think this criticism will be found to be wholly unjust; and, indeed, the three-term session would be a lighter, not a heavier, load upon the professorial necks; for it would give time for more full, leisurely, and satisfactory treatment of a subject, and do away with the intolerable, crowded haste which now fills the winter sessions.

The other scheme looks to a *two-term session*. The two winter terms would be lengthened, opening earlier—about the beginning of October—and ending later in spring. The winter vacation, at present absurdly short, would be extended to a month or six weeks, and some four or five months would remain for the long vacation. This latter project implies, perhaps, a less violent departure from the Scottish tradition, and this is so far an argument in its favour. But the former—the three-term session—seems to have greater merits. Any lengthening of the winter term is to be deprecated, for the student's mind is apt to become jaded with too long a continuance of one set of studies. And probably the three-term system would serve better to bring the faculties into line, and foster that unity of feeling within the university which has been growing up during the past decades.

Closely connected with the question of terms is that of the methods of teaching. When one reads the regulations for degrees, one is met again and again by the haunting formula, "a course of not fewer than one hundred lectures," and this formula is a spell which lies over the whole life of the university to impede its freedom. Lectures, indeed, are a very important—probably the most important—instrument of culture under the Scottish university system. They impart an orderly and synoptic habit to a student's studies which no other method can give; and in the Scottish universities they are generally of a very high standard of excellence. But when used to the exclusion of other instruments, they are apt to have a dangerous influence, tempting the student to take his learning at second hand, and robbing him of opportunities of education by discussion. In scientific studies practical and experimental work is recognized as necessary; yet even here there is large room for further development in our universities; and in literary, historical, and philosophical studies the opportunities of tutorial work, of personal converse between teachers and students, are sadly lacking. If a portion of the time which is now occupied by the professor in lecturing were employed in discussion of the matter of lectures, the value of the information received would be infinitely greater. And, besides this, there would be an inestimable gain from the increased opportunities of personal influence.

In order to obtain these benefits something further is needed—an increased staff of teachers. Large classes must be divided for such personal tuition into smaller circles, and a professor with one assistant could never overtake this work. Further, each group of studies, equipped with an adequate number of professors and tutors, should be so organized as to become a distinct and visible unit within the faculty. Each of these "schools"—of history, philosophy, classics, and so forth—would be a centre of activity, social as well as intellectual. This, indeed, is actually taking place with the growth of corporate feeling. We have our classical and historical and other such societies, which do an admirable work in developing both study and common life. This work should be recognized and used in university reform. With an enlarged tutorial system, such centres of interest would do much to complement the ordinary routine of lectures and examinations.

There are other matters to be discussed—the whole question of examinations, of the place of essay-writing in class-work, and so forth. But these, I think, will be found to settle themselves when the whole scheme of teaching is more adequately organized. There remains, also, the problem of residence and academic discipline. Its solution, as I believe, lies in that growth of the universities' special life which has already begun and is manifest in the various institutions constructed by students for the benefit of students. This growth would be immensely furthered by a wise reform of the system of teaching. The work is full of hope. The universities are among the nation's most precious inheritances; they hold the secrets of the nation's future greatness and happiness.

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CURRENT EVENTS.

Fixtures.

At the meeting of members of the College of Preceptors, on February 20, Mr. P. A. Barnett will read a paper on "Poetry as an Atmosphere, a Discipline, and a Study."

* * *

On February 14 Prof. Adams will deliver, at the College of Preceptors, the first of a course of twelve lectures to teachers on "The Psychological Bases of Teaching and Education." The course will be helpful to students who are preparing for the Associateship, Licentiateship, and Fellowship Examinations of the College.

* * *

A *Conversazione* for members of the College and their friends will be held at the College on March 6.

* * *

Mons. A. Noblet will deliver a lecture on "Barbey D'Aurevilly—Le Chevalier des Touches," to the Société Nationale des Professeurs de Français en Angleterre at the College of Preceptors on Saturday, February 23, at 4 p.m.

* * *

The Rev. Dr. Moore, Principal of St. Edmund's Hall, Oxford, will deliver a course of 12 lectures on Dante's "Paradiso" at University College, London, on Wednesdays and Thursdays at 3 p.m., beginning February 6th. Open without fee or ticket.

* * *

Prof. Robertson will continue his course of lectures on "German Literature" at University College, London, on Saturdays at 11 a.m. Open free to all teachers in London schools.

* * *

At the Moral Instruction League (28 Buckingham Street, Strand) specimen moral lessons will be given by Mr. F. W. Rowe on February 11, and by Mr. J. H. Wicksteed, M.A., on February 25 ("Sympathy"), at 7 p.m. prompt.

* * *

Mr. F. Durrant Fox, M.A. Lond., of the Collège de France, and of the University of Grenoble, will continue his course of lectures on Phonetics at the Birkbeck College on Tuesdays at 8 p.m.

* * *

The following lectures and discussions have been arranged by the Childhood Society and the British Child-Study Association at the Parkes Museum, Margaret Street, W.:—February 7, "Organized Play". (Countess of Jersey); February 14, "Care of Throat, Nose, and Ears in Children" (Dr. St. Clair Thomson); February 21, "Brain Development through Play" (Mr. J. Arrowsmith); February 28, "Mental Training in Childhood" (Dr. Robert Jones). At 8 p.m.

* * *

The first annual meeting of the Historical Association will be held at University College, London, on February 8 at 5.30 p.m. Mr. Bryce will deliver an address. At a

conversazione (8–10 p.m.) Profs. Firth and Tout will read papers. Particulars from the Secretary, Miss M. B. Curran, 6 South Square, Gray's Inn, W.C.

* * *

The second exhibition of the International Art Gallery (14 King William Street, Strand), which was opened on January 19, will run till February 16. Water-colours by leading British, French, and Dutch artists.

* * *

The Second International Congress on School Hygiene will be held at the University of London, August 5–10. An exhibition of school building and furnishing appliances in connexion. Particulars from the Offices, Royal Sanitary Institute, Margaret Street, W.

Honours.

The University of Edinburgh has conferred the honorary degree of LL.D. upon the Prince of Monaco in recognition of his oceanographical researches.

* * *

On the occasion of the meeting of the Congress of the Educational Institute of Scotland at Dundee, Principal Donaldson, of St. Andrews University, received the honorary Fellowship of the Institute. Dr. Donaldson was President of the Institute as far back as 1868, when he was Rector of Edinburgh High School.

* * *

Mr. Bryce has been elected an honorary member of the American Historical Association—"a unique distinction (says the *Athenæum*), in succession to Ranke, Mommsen, and Gardiner."

* * *

Dr. S. S. Laurie, Emeritus Professor of Education in Edinburgh University, has been presented with his portrait, painted for the subscribers by Mr. Fiddes Watt. Prof. Laurie acted for over fifty years as Secretary of the Education Committee of the Church of Scotland, retiring in 1905.

* * *

It is proposed to commemorate the late Mrs. Craigie by putting up a portrait plaque in University College, London, and a replica in some suitable position in the United States, and by founding a scholarship for the study of modern English literature in England and another in the United States. Subscriptions to Mrs. Rochfort Maguire, 3 Cleveland Square, St. James's, S.W.

Endowments and Benefactions.

An influential appeal, supported by local landlords, members of Parliament, large employers of labour, leading educationists, miners' agents, and others, has been issued for funds to establish a Mining School for South Wales and Monmouthshire in connexion with Cardiff University College.

Sir W. T. Lewis has promised £1,000, provided £30,000 is raised in contributions from coal owners, royalty owners, and workmen. Mr. F. L. Davis has also promised £1,000 on the same conditions.

* * *

Prof. Schuster has provided £350 a year for the next three or four years as a stipend for a new Readership in Mathematical Physics in Manchester University.

* * *

The British Academy has received £10,000 to establish a memorial of the late Mr. Leopold Schweich, of Paris—a fund to be devoted "to the furtherance of research in the archæology, art, history, languages, and literature of ancient civilization with reference to Biblical study."

Mr. W. A. Cadbury has presented to Birmingham University the valuable collection of *algae* made during the past thirty years by Mr. E. M. Holmes, F.L.S., Curator of the Pharmaceutical Society's Museum—about 13,000 specimens.

* * *

Two anonymous donors have given £200 and £10 towards the fund for the endowment of medical education and research at Guy's Hospital.

* * *

The Hon. A. Robert, of Cawnpore, has signified his intention of leaving £10,000 to Aberdeen University to endow a fellowship for cancer research.

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The late Dr. John Wight has left £3,000 to Aberdeen University to found four or more medical bursaries.

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Mr. W. F. Stanley, of the well known firm of optical and scientific instrument makers, has built and endowed a new trade technical school at South Norwood Hill, for 400 boys, at a cost of some £50,000.

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Mr. John D. Rockefeller's New Year gifts to Chicago University amount to 2,917,000 dollars. Of this sum 2,700,000 dollars is intended for a permanent endowment fund, while the remainder will be employed to meet the annual deficit in the funds of the University, and to provide for an increase in the salaries of instructors.

The *New York Herald* states that, with these gifts, Mr. Rockefeller's benefactions to the University will aggregate 21,416,921 dollars. The University has a total endowment fund of 10,552,616 dollars, which places Chicago fifth in the scale of endowments among this country's institutions. Girard College has a fund of 21,495,072 dollars; Stanford University one of 20,000,000 dollars; Harvard one of 18,036,025 dollars; and Columbia one of 15,648,370 dollars.

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As Mr. Carnegie's gift of £2,000,000 for the establishment of pensions for superannuated professors is limited to undenominational institutions, and Chicago University's charter requires the President and two-thirds of the professors to be Baptists, Mr. J. D. Rockefeller has subscribed £600,000 towards an endowment for pensioning Chicago professors.

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Several other substantial gifts for the advancement of higher education in America are recorded in recent issues of *Science*.

Among these may be mentioned donations of £20,000 each to Western Reserve University, Cleveland, O., by Mr. H. M. Hanna and Col. Oliver H. Payne. The £40,000 thus subscribed is to be used in establishing and endowing a Laboratory of Experimental Medicine in the Medical School. Mr. William Smith, of Geneva, N.Y., is to found a woman's college. The name of the new college will be the William Smith College for Women, and it will have an endowment of about £70,000. A Carl Schurz Memorial Professorship is to be established at the University of Wisconsin as a result of the movement recently started in Milwaukee by a number of prominent German-Americans. The plan is to raise an endowment of £10,000, the income of which will be used for the establishment of an annual course of lectures at the State University, to be given by prominent professors of German universities. Mr. Andrew Carnegie has offered to give Washburn College, Topeka, Kansas, a second £10,000 for its endowment fund, provided the total endowment reaches £40,000 by January 1, 1908.

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Mr. Andrew Carnegie has offered £20,000 to Queen's College, Ontario, on condition that an additional sum of £80,000 be subscribed.

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Montreal is raising a million dollars for an endowment fund for M'Gill University. Mr. Robert Reford has promised 50,000 dollars.

Appointments and Vacancies.

LORD CURZON OF KEDLESTON, M.A., Hon. D.C.L., who was unable to deliver the Romanes Lecture at Oxford last year, has been appointed Romanes Lecturer for 1907.

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PROF. CUTLER, M.A., K.C., of King's College, has been appointed representative of the Faculty of Laws on the Senate of London University, in succession to Lord Davey, resigned. Prof. Cutler has been on the staff of King's College since 1865.

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THE Principalship of the University of Glasgow is vacant through the death of the Very Rev. R. H. Story, D.D., who has held the office since 1898.

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PROF. ERNEST RUTHERFORD, F.R.S., Macdonald Professor of Physics in M'Gill University, Montreal, has been appointed Langworthy Professor of Physics and Director of the Physical Laboratories in Manchester University, in succession to Prof. Arthur Schuster, Sc.D., F.R.S., resigned.

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PROF. KUENEN, Ph.D. Leyd., a son of the famous Dutch theologian, has resigned the Harris Chair of Physics in University College, Dundee, and accepted the new Chair of Physical Chemistry in the University of Leyden.

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AT Liverpool University Mr. Percy E. Newberry has been elected to the Brunner Chair of Egyptology, and Mr. John Garstang, M.A., B.Litt. Oxon., to the Rankin Chair of the Methods and Practice of Archæology.

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AT the Armstrong College, Newcastle-upon-Tyne, Mr. E. M. Eden, A.M.I.C.E., has been appointed Lecturer in Engineering in the College, in succession to Mr. H. R. Cullen, M.A., who was recently elected Head Master of the Marine School at South Shields; and Mr. John Watson, B.Sc., has been appointed Assistant Lecturer in Agricultural Chemistry, in place of Mr. Ernest Jeffrey, B.Sc., who has obtained an appointment as chemist to the Darlington Wire Mills, Ltd.

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THE REV. A. E. GARVIE, M.A. Glas. and Oxon., Hon. D.D. Glas., Professor of Philosophy of Theism, Comparative Religion, and Christian Ethics in Hackney and New Colleges, London, has accepted the Principalship of New College.

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THE Principalship of Brecon Memorial College is vacant through the lamented death of Principal David Rowlands, B.A.

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MR. F. W. MARRS, M.A. Cantab., has been appointed Principal of the Elphinstone High School, Bombay.

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MR. A. L. HETHERINGTON, Principal of Rangoon Government Collegiate School, has been appointed to the new post of Assistant Director of Public Instruction, Burma.

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THE Professorship of Mathematics in the Christian College, Madras, is vacant through the death of Mr. F. P. H. Stirling, at the premature age of twenty-six.

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MR. SIDNEY H. WELLS, A.M.I.C.E., A.M.I.M.E., Head Master of Battersea Polytechnic Day School, has been appointed Director-General of Education in Egypt.

THE REV. H. WOOLSEY, M.A. T.C.D., curate of St. Columba's, Haggerston, has been appointed Organizing Secretary of the Woodard Schools (Midland Division).

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MR. J. DENNIS COALES, B.Sc., A.M.I.E.E., of University College, Nottingham, had been appointed Senior Lecturer in Electrical Engineering in Birmingham University, in room of Dr. D. K. Morris, resigned.

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MISS CUMBERBIRCH, B.A. Lond., has been appointed Lecturer in the Avery Hill Training College, Eltham.

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MISS M. A. HOLLINGS, second mistress, Baker Street High School for Girls, has been appointed Head Mistress of Edgbaston Church of England College for Girls.

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MR. F. ST. JOHN LACY, A.R.A.M., has been appointed Lecturer in Music in Queen's College, Cork.

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THE REV. P. S. WADDY, an old Oxford blue, and a member of a famous Australian family of cricketers, has been appointed Head Master of the King's School, Paramatta, Sydney.

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MR. J. SPITTLE has been appointed Hon. Secretary to the Educational Handwork Association (see advertisement, page 42), in room of Mr. W. McWeeny, resigned.

Literary Items.

MESSRS. METHUEN will publish immediately "The Substance of Faith," by Sir Oliver Lodge —an elaboration and expansion of the recent Catechism put forth by the author.

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MR. HENRY FROWDE will publish this month a volume by Mr. T. S. Omond, sketching the history of prosodical criticism in England and America during the last 200 years —"English Metrists in the Eighteenth and Nineteenth Centuries."

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THE Cambridge University Press is preparing a complete edition of the works of William Dunbar, edited by Dr. H. Bellyse Baildon.

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MR. UNWIN is issuing a third and popular edition of "The Heart of the Empire"—a very useful volume of essays on problems of modern city life, by ten young Cambridge men.

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A NEW work by the Hon. Albert S. G. Canning—"Shakespeare studied in six Plays" ("Othello," "Macbeth," "King John," "Richard II.," "Henry IV.," and "The Merry Wives of Windsor")—is announced by Mr. Unwin.

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MESSRS. CONSTABLE & CO. will shortly issue a "Virgil Pocket Book—Vergilii Musa Consolatrix," edited by Mr. S. E. Winbolt and briefly introduced by Mr. Arthur Sidgwick.

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WITH a view to the reformed pronunciation of Latin, Messrs. Dent will immediately publish as a sixpenny pamphlet the sections of "Dent's First Latin Book" dealing with pronunciation, together with the first sixteen sections of the Reader in Latin spelling and phonetic transcript.

Mr. Edward Stanford announces for early publication an "Introduction to Plant Ecology," by Prof. G. Henslow, for the use of teachers and students.

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Messrs. Cassell announce a series of the masterpieces of French literature, edited by Mr. de V. Payen-Payne, at a very moderate price.

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Messrs. Ralph, Holland, & Co. announce the early publication of a new edition of Bacon's "Essays," by David Salmon, Principal of Swansea Training College; of Books IV. and V. of Ellis W. Heaton's "Scientific Geography,"—North America and Africa; of "Studies in Line and Mass," in Mr. Branch's Art Series; and of a History of England (1688–1760), by A. A. Thomas, B.A., L.C.C., for the Teachers' Certificate Examination.

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The Walter Scott Publishing Company are issuing "The Evolution of Matter"—a translation of Dr. Gustave Le Bon's popular work "L'Evolution de la Matière."

General.

A proposal has been mooted for the establishment of a University College at Hull. The scheme contemplates the acquisition of some 50 acres in the outskirts of the city, and the combination of a Technical School and a Training College for Teachers with the University College buildings. The new institution will probably seek affiliation with the University of London.

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The Senate of London University have accepted an invitation from the University of Paris to send 80 representatives of the University to visit Paris at Whitsuntide.

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The Provisional Committee of Management of the Society for the Study of Biblical Subjects has had recent accessions of eminent scholars. The chief object of the Society is "the encouragement and advancement of the sphere of learning associated with the Sacred Scriptures and the departments of knowledge more or less in immediate relation thereto." The Hon. Secretary is the Rev. F. C. Cook, 35 Donovan Avenue, Muswell Hill, N.

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Bethnal Green Free Library makes an appeal for new voluntary subscribers on its thirtieth anniversary. Messrs. Barclay & Co., Lombard Street, E.C., receive donations.

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M. Briand, the French Minister of Education, proposes to suppress the *baccalauréat*, or Bachelor's degree, conferred on a boy on admission to the university.

IMPORTANT EDUCATIONAL MEETINGS.

Association of Head Masters.

The Annual General Meeting of the Incorporated Association of Head Masters was opened on January 10 at the Guildhall. The Lord Mayor attended in state, and welcomed the members. The Rev. Dr. G. H. Rendall (Charterhouse), the new President, took the chair. There was a large attendance of head masters from all parts of the country. On the motion of Canon Swallow, the cordial thanks of the Association were accorded to Mr. J. Easterbrook, the retiring President.

The President's Address.

The President then delivered his address. He said the air was thick with educational conferences, and each year saw them multiply in number and in kind. The demands pressed on them from every side, each weighty and in itself reasonable, became in combination incompatible. They were in danger of being snowed up; and, to prevent the catastrophe, universities and Boards—of Education and other—were clearing little passages in particular directions, selected often by traditional or topical caprice, to which, for the moment, they were bidden to restrict themselves. In these straits they were confronted by opposite alternatives. There was the alternative of uniformity, which so much simplified mechanical arrangements, and towards which a diseased belief in extraneous examinations was continually driving them. And, besides the convenience of officials and the framing of examination schemes, the enlargement of education areas and the centralization of control were continually squeezing schools into identity of pattern, method, and outlook, and frowning upon individual experiment and enterprise. He had little doubt that, if education was forced into a single groove of intellectual discipline, the selected groove would be the best, or among the best, that could be chosen for the majority; but no doubt whatsoever that the intellectual health and wealth of the whole community would receive a vital wound through the sacrifice of that element, with which in truth all promise and progress lay—the best, the brightest, the most favoured—to the exigencies and the limitations of the mass. In education the preservation of aristocracies was indispensable; education had ever struck roots downwards; and the elementary school needed the university even more, if possible, than the university needed the elementary school. The alternative course was frankly to recognize variety, not uniformity, as the ideal; to encourage diversities of programme in schools of different type, different surrounding, and different constituents; to secure equality of opportunity for schools of unusual or even eccentric, as well as schools of normal, aim; to foster initiative in teachers, responsibility and independence upon boards of managers; to believe in the importance of diversity, experiment, and even originality; to tolerate, and when necessary to abet, resistance to the canker of examination and the steam-roller of centralized administration. Other countries stood face to face with the same problems, and were meeting them according to the bent of the national genius. In England we had gone to work on the usual English lines, creating organs of administration, and leaving things—the pessimist would say to muddle through, the optimist to work out their own salvation. Quite recently we destroyed the only public bodies—the School Boards—who had gained some experience and knowledge in the field of public education, and committed it to that general talent for affairs which managed our highways, our sanitation, our asylums, our police, and the multifarious departments of municipal finance. Education was deliberately handed over to the practical man; and the things, the studies, the methods which the practical man could best and most sincerely appreciate would have the advantage. What was the bearing of all this upon the work of their Association? Members of County Councils—with very rare exceptions—knew nothing of the minds of the young, of the educational value of school subjects, of their correlation in a scheme of mental training. They depended, and they did wisely to depend, on the judgment of those who were in daily contact with the facts. This gave to their Association and its debates a new significance and responsibility. In the field of secondary education for boys the Association was far the most comprehensive that existed. Only through such gatherings as that, such interchanges of confidence and explanation, could they attain disinterested judgments, could they stand for liberty, for comprehension, for variety, and for completeness; and the preservation of that in England depended chiefly on themselves. Referring to the programme of the conference, which turned largely upon questions of registration, compensation, tenure, and control, he said that in the forefront stood the Register, and he could not ask for a happier illustration. If the B Register was to be a mere index of those whose livelihood was gained by teaching of a secondary kind, it could be handed over to County Council clerks or the Registrar-General or any statistical department which had no more serious work to occupy it. But experience had shown that, if it was to have vital worth and meaning, if it was in any sense to guarantee capacity or to affect *status* and remuneration, no mechanical tests or rules would suffice for its compilation. The work must be begun and carried on by those who through living experience were intimate with all the intricacies of qualification and of practice, and who would command the confidence of the profession at large. To the formal creation of "a Council representative of the teaching profession" they gave glad welcome. It meant much, and the promise of much more. Their part would be to strengthen its hands and to uphold its rulings by loyalty, by disinterestedness, by impartiality, and by trust. It would save them, as nothing else, from the

perilous risk of championing or protecting inefficiency. The rock on which the latest Education Bill was shattered was the determination to fetter the freedom of the teacher by exclusive and prohibitive restraints. Conceive them applied to the secondary school, and they would all, he believed, admit that an Arnold or a Thring would on the next day have sent in his resignation. To win and hold their franchise they must now exercise like firmness and like fair-mindedness.

The Teachers' Register.

On the motion of Dr. McClure (Mill Hill) the conference recorded its hearty agreement with the amendment to Clause 25 of the Education Bill carried in the House of Lords on the motion of Lord Monkswell, which amendment provided for the constitution of a Registration Council representative of the teaching profession, and for a Register which "shall contain the names and addresses of all registered teachers in alphabetical order in one column, together with the date of their registration, and such further statement as regards their attainments, training, and experience as the Council may from time to time determine that it is desirable to set forth." Mr. Wood (Darlington) suggested the addition to the resolution of a rider directing the Council to give its early attention to the matter. The rider was adopted.

Methods of Training.

On the motion of Mr. Paton (Manchester), seconded by Mr. R. W. Hinton (Cricklewood), it was agreed, after discussion: "(1) That, for the purpose of 'training' as specified in Lord Monkswell's amendment, this Association is of opinion that, as a substitute for attendance at a day or resident training college, work in a school recognized for the purpose, under the personal supervision of the head master, or a master of method under the control of the head master, be allowed; and (2) that the new Register should ultimately acquire evidence of adequate training and of a period of probation in actual school work."

Secondary School Schemes.

Canon Swallow, in the absence of Dr. Upcott (Christ's Hospital), moved: "That this Association desires to urge upon the Board of Education the importance, alike in the amendment of existing schemes and in the issue of new schemes, (1) of safeguarding the several control of governing bodies and of head masters; and (2) of establishing a real and effective unity between the schools and the Local Education Authorities." Mr. F. H. Chambers (Lincoln) seconded the resolution; and a discussion followed, in the course of which an amendment was moved by the Rev. W. H. Howlett (Bury) and seconded by Mr. A. W. Reith (Halifax) to omit the words after the word "importance" and substitute the words "of the administering of all secondary schools under a scheme of the Board of Education." This was lost; but a further proposal to omit the words after the words "head masters," moved by Mr. Varley and seconded by Mr. Steel (Northampton), was carried. The resolution as amended was adopted.

Inspection of Secondary Schools.

Canon Swallow moved a resolution to the effect "That this Association desires to express its appreciation of the courtesy shown by His Majesty's Inspectors in their inspection of schools, and to request the Board of Education to summon, at least once a year, a conference of head masters and Inspectors upon difficult questions of detail." The discussion of the resolution, which took place in private, resulted in the adoption of the "previous question."

Assistant Masters in Secondary Schools.

The annual meeting of the Incorporated Association of Assistant Masters in Secondary Schools was held at the Westminster School, London, on January 11, Mr. A. A. Somerville (Eton College) in the chair. Mr. C. H. Greene (Berkhamsted), the retiring Chairman, in presenting the annual report, said there was in it evidence of varied activities, and he hoped the members of the Association would see proofs that it was doing a very considerable work, not only for assistant masters, but also for education. It was somewhat unfortunate that the educational discussions of the present time were in water-tight compartments. The failure of the educationists to impress public opinion was, he thought, very largely due to the fact that the experts were not all gathered together. There was a danger to education from what was called bureaucratic tyranny, and, above all, there was a danger in the new local bodies that were to control so much of the education. He also thought there was a danger in the low fees which were being charged in municipal schools; but the Board of Education appeared to be alive to the danger. On the question of salaries the Association had accomplished something of very great value to teachers. The London County Council had adopted the scale practically as suggested to them, and other Councils were considering the Federal scale. In conclusion, Mr. Greene said the Association had resolved to take action in regard to the dismissal of assistants at Richmond (Yorkshire). They had raised a guarantee fund, and they were prepared to carry their case if necessary to the House of Lords rather than submit to the condition of serving in dependence upon the mere whim of a head master. The report was adopted.

Mr. T. E. Page (Charterhouse), submitting a resolution in which the Association welcomed the growing feeling of union among secondary teachers as shown especially in the formation of a Federal Council of Secondary Schools Associations, and looked forward confidently to the promotion by the Council of a sound policy in matters of education, said that, if there was one thing needed in education at the present time, it was unity. The condition of education was such as could be described only as "most admired disorder." The ruling power in education was chaos. Let them look at the huge group of questions, complicated questions, which dealt with the well-being of teachers, and see how necessary it was that there should be some common body which would consider those questions and try to settle them in the common interests of the profession. Unless those questions were settled, and unless the conditions of work in the schools were improved, the country would not get in the teaching profession men of that character and proficiency which were absolutely necessary in the interests of the nation if the work of education was to go forward as it ought to do. Mr. Greene seconded the motion, which was agreed to. Canon Bell was heartily thanked by the Association for the work he had done in the cause of unity among secondary teachers.

Resolutions were also carried welcoming the salary scheme for secondary teachers adopted by the London County Council, and expressing satisfaction that in the Report of the Board of Education for 1905–6 stress was laid upon the importance of increasing the present inadequate salaries of the teaching staff. A motion, which read, "That this Association would welcome the institution of a Registration Council representative of the teaching profession to frame regulations for, and to maintain, a Register of Teachers qualified to teach in secondary schools," was moved by Mr. A. H. Cooper (Wrexham County School), and, along with other resolutions on the Register, was adopted.

Mr. S. E. Winbolt (Christ's Hospital) proposed: "That the Association should support the reformed pronunciation of Latin recommended by the Classical Association and the Philological Societies of Oxford and Cambridge," and the motion was unanimously agreed to.

Dr. H. F. Heath, Director of Special Reports and Inquiries to the Board of Education, speaking on "The Place of Modern Languages in Secondary Education," said it might safely be said that Latin would never again be taught in the greater number of lower-grade secondary schools. It was a very serious matter. A language could be acquired only through the study of things, and this, it seemed to him, was the special danger which threatened the American system of teaching. What languages should be studied? Obviously, first and foremost, came the mother tongue. But could all children, no matter what their future or the length of their school life, commence some other language than their own? Foreign languages should be preserved for the secondary schools. In the case of English children the first language should undoubtedly be French, and when the young student had spent two years, say, at French, he might commence German, and after a time begin a study of Latin, dropping German altogether if Greek was commenced. French should not be taken until some considerable facility with the mother tongue had been attained, and certainly not before the age of ten years. A discussion followed, and Dr. Heath was thanked for his address.

Assistant Mistresses in Secondary Schools.

The twenty-third annual meeting of the Incorporated Association of Assistant Mistresses in Public Secondary Schools was held on January 12 at Dr. Williams's Library, Gordon Square, W.C. Miss Laurie, Ladies' College, Cheltenham, presided. A resolution having been adopted in favour of the establishment of an Educational Conference for the discussion of purely educational subjects, Miss Hodge (Notting Hill High School)

was elected President for the ensuing year. Miss Skeat (Queen's School, Chester), the retiring President, in the course of her presidential address, said that in the Federal Council, which had been formed during the past year, they had for the first time a body representing all the various kinds and grades of secondary teachers, and they now had a means of discussing their joint difficulties. With regard to the work in the schools, there was no doubt that moral training was of the highest importance. They should always remember to make training for life paramount over the training in any particular branch of work. The Association had formed Information Committees to report on the action of the various Local Education Authorities, upon whose activity the welfare of those who served in the schools now depended. The framing of regulations for secondary schools by the Board of Education was a matter for serious consideration. Unless the Association took some action it seemed possible that the levelling policy would become a fixed one. The principle that the same amount of time should be given to each grade of subjects during the whole of a child's school career was one that could not commend itself to the practical teacher. In their secondary schools they seemed to be losing sight more and more of that freedom, variety, and elasticity which were looked upon by the Royal Commission on Secondary Education as the saving grace of our national system. There was great need for them to hold a watching brief for the curriculum in order to prevent overcrowding and ill-advised regulations, and to obtain far greater elasticity to meet the requirements of local conditions. With regard to salaries and tenure, there was an increasing tendency on the part of the Local Authorities to consider the conditions under which teachers were working in the schools, and the action of the London County Council had impressed upon others the fact that in many areas the salaries were not adequate. At the same time, many of the schemes of salaries did not include an annual increment, or provide for a pension. So long as a woman, after teaching for many years, might find herself stranded in middle life without the means of securing a competence, it could hardly be said that the teacher's lot was a bright one. The profession of the teacher required due preparation and training; and the work of women teachers was equal in quality and quantity with that of men, and it should be paid for without regard to the sex of the worker. A vote of thanks was accorded to Miss Skeat for her address, and for her services as President.

Miss Bancroft (Bristol), Miss Layton (Cardiff), Miss Lees (London), Miss Limebeer (Manchester), Miss Oakeshott (Leeds), Miss Pearson (St. Andrews), and Miss Quelch (Birmingham) read short papers on the working of the scholarship schemes of the Local Education Authorities in the areas they represented. Miss Lees, of the Clapham High School, speaking specially of the London County Council County Scholarships, said the scheme might work better for boys than it did for girls. Whereas two-thirds of the 2,000 junior scholarships were awarded to girls, yet only 30 of the 100 intermediate scholarships went to them; that is, more girls were started well, but fewer were enabled to finish. "Some Reflections on the Teaching of English" was the subject of a paper read at the afternoon session by Miss C. L. Thomson. With little children she thought a good deal of time should be given to oral composition. Having herself told, not read, a story from Greek or Scandinavian mythology, the teacher might choose three or four children to reproduce it to her. The aim was to get paragraph answers; and if too many children were allowed to contribute they would get only sentences. The oral composition might also be connected with Nature study or history. But written composition should not be long delayed, as children of eight or nine were often anxious to write stories. Paraphrasing and *précis* writing also afforded valuable language exercises. A brief discussion followed.

Science Masters in Public Schools.

The annual conference of the Public Schools Science Masters' Association was held on January 12 at the University of London, South Kensington. The President, the Rev. the Hon. E. Lyttelton, Head Master of Eton, took the chair; and among those present were Sir Oliver Lodge, Prof. W. A. Tilden, Dr. Garnett, Prof. Miers, and Mr. Dufton and Mr. Murray, from the Board of Education. After the transaction of some private business, which included the election of Prof. Miers as President for the ensuing year, the Chairman read the first paper, on "The Place of Science and of Literature in a General Education." By science he meant experimental work done by the pupil himself under supervision and guidance, and the pupils he was considering were boys up to the age of sixteen or sixteen and a half. What was the special nature of the training given by experimental work in science? To what faculties did it appeal? Did literature encourage the same faculties or others equally important? These questions answered, it would be justifiable to frame a tentative estimate of the place science and literature ought respectively to hold. The advantages of experimental science which seemed indisputable were constant appeal to reason, constant verification, constant appeal to the senses of touch and sight, and teaching of patience and accuracy. It brought a boy into contact with an army of discoverers; it illuminated daily life with interest by stimulating not only the powers of the sense impressions, but also the desire to use them; and it brought into play the precious faculties of wonder and imagination. The admirable exercise of the faculty of touch was not given by literary studies, nor was the training of the sense of sight or the memory of things seen, except as regards words and Greek accents. The training of the reasoning faculty was constant in tolerably good classical teaching, and in this, he believed, lay the value of classics for ordinary boys rather than in the training of the power of expression, as was often said. But in speaking of literature in connexion with the general education of boys till sixteen and a half, he conceived of classics almost wholly as a gymnastic, and he thought that, in regard to the training of the reason given by classics, it made a considerable difference whether the old exercise of Latin verses was included or not. Verses in their early stages taught all that Latin prose taught of obedience to law, accuracy, patience, grasp of English sentences, besides the grand fact that they gave a rudimentary idea of the pleasure of creating something, and also verification, similar to that yielded by experimental science. He would therefore say that classical training before sixteen and a half secured, besides training in reasoning, verification to a less degree than science, inductive thinking rather less, touch not at all, imagination and wonder in a very different way; so that it was difficult to compare the two. Classical work, however, in schools undoubtedly failed as compared with science in bringing a boy into touch with discovery and research; on the other hand, even before the age of sixteen and a half, it brought a boy more decisively into contact with life, rich, generous, and epoch-making in the history of mankind. The outcome of the comparison was that the two great departments of learning covered to some extent the same ground in that some of the faculties to which they appealed were the same. But each had a department which the other did not touch, and even where they apparently overlapped the nature of the stimulus which they professed to give was not at all the same. Now he maintained that, as soon as this fact was clearly seen, all discord should cease between teachers of science and literature. There was no call to consider which of these subjects would be the greater loss if it were withdrawn. There was room for both.

Sir Oliver Lodge said all would agree that the hostility between the two branches of education should cease, and that each could give help to the other. They would agree also about the importance of training in handicraft, and ambidexterity should be encouraged. It might be true that some literary subjects afforded as good training as science, but as subject-matter they seemed to him vastly inferior. Teaching should not be confined to quantitative science, which often became rather dull. It was important to excite interest, not to overload with information, to keep the boys' minds hungry.

Prof. W. A. Tilden said that in choosing subjects and methods it should be remembered that the faculties of boys were not all developed equally and at once, and that at the earlier ages there was a preponderance of the power of memory, the reasoning powers coming later. It was hard on little boys to be called on to infer something from an experiment; it was sufficient that they should be able to observe accurately, so as to be able to describe intelligently.

Mr. Berridge (Malvern), Mr. Shenstone (Clifton), and the Rev. A. L. Cortie (Stonyhurst) also took part in the discussion. To Mr. Berridge's question, whether he contemplated fifteen or sixteen hours a week being still devoted to classics and only a couple of hours or so to science, Dr. Lyttelton replied that when he said scientific training he meant scientific training, and enough time must be allowed to make it real.

In the second paper, on "The Internal Economy of School Science," Mr. Thwaites (Wyggeston Schools, Leicester) expressed the opinion that it was time the public schools formulated their views on science teaching, and he presented some

statistics bearing on the subject which he had based on the answers to certain questions received from 29 different schools. In 23 of the schools 95 per cent. of the boys were in a general science course and 5 per cent. in a special course. In the general course the average number in the classes was 21, and the time devoted to the subject four hours a week; in the special courses the average number in the class was 14, and the time twelve hours a week.

In the third paper Mr. F. R. Leyland-Wilson (Charterhouse) discussed the course of instruction in science leading up to the atomic theory, with some points in its teaching.

After the conclusion of the conference there was an exhibition of scientific apparatus, which, besides contributions from various manufacturing firms, included a number of appliances made or designed by members of the Association.

The Teachers' Guild.

The Conference convened by the Teachers' Guild of Great Britain and Ireland was held at the College of Preceptors on January 11 and 12. On January 12 Mr. Marshall Jackman (past President of the National Union of Teachers) read a paper on "The Functions of the Elementary, Higher Elementary, and Secondary Schools." He said that he felt bound to look upon higher elementary schools as a dislocation of our educational system: they could only be tolerated as a stop-gap. With a complete system of secondary schools, higher elementary schools would not be wanted to any great extent. Unless care were taken, he was afraid that the proposed scheme for higher elementary schools might mean the side-tracking of the education of the children of the workers. In illustration, he criticized severely certain expressions in recent documents issued by the Board of Education. He agreed with the Board of Education when they said that a "break of gauge was harmful and wasteful." The higher elementary school system was a break of gauge. Higher elementary schools might be necessary now, and even for some time to come, owing to difficulties which at present existed, but which, sooner or later, would, he trusted, eventually be overcome. The objects of training in these schools, as in all other schools, should be the development of character, the training of the faculties, the acquiring of power to assimilate knowledge; and education, rather than specialization, should be dominant. The aim of the managers and teachers of these schools should be to develop the education therein given, so that when the time arrived to establish an ideal educational system, consisting of kindergarten school in the first place leading to the elementary school, and thence to the secondary school, they might become good public secondary schools. Secondary schools must not be class schools; like elementary schools, they must be the people's schools.

Prof. Adamson, in a paper on the same subject, said that the only sound basis of division which could be employed in classifying schools of different grades as parts of one system was that afforded by the length of school life of the respective pupils; all other marks of difference were either consequential upon that, or else were merely adventitious. He maintained that a vigorous industrial or commercial society developed the need for a school which was neithe secondary nor entirely coincident with the elementary school. It seemed clear that the higher elementary school met a modern need. Though such schools might not—one would like to say should not—have a specifically technical purpose, they might very well possess technical leanings or bias. The secondary school could not, he considered, fulfil its function for pupils who disappeared at sixteen; the leaving age should be seventeen or eighteen at the lowest. It was upon the separate and efficient existence of the secondary school that the standard of university, professional, technical, and higher education depended.

Mr. H. W. Atkinson (late Head Master of the Boys' High School, Pretoria) was of opinion that there should not be an absolutely continuous connexion between the elementary and secondary schools. The Rev. H. V. Dawes (Bridgnorth) did not agree that education should proceed along one line from the kindergarten to the elementary and secondary schools in this country, where the social conditions varied so much. He thought that branches should be made at various stages. Mr. Sykes (President of the National Union of Teachers) was opposed to the idea of higher elementary schools, and said that, as far as the provinces were concerned, they did not require such schools.

Mrs. Sophie Bryant, LL.D. (Head Mistress of the North London Collegiate School), then opened a discussion on the question of "The Differentiation, in point of Curriculum, of Higher Elementary and Secondary Schools." She regarded the question as only one phase of a very large subject—namely, the relation of the curriculum of the school to the career of the boy or girl. She laid stress on the importance, in all stages of a boy's education, of an early introduction of a practical interest in the career which the child was intended to follow. The curriculum should be adapted in so far as it affected a development of that interest. She regarded the higher elementary school as a type of secondary school. A discussion followed.

The subject of "The Passage of Pupils from Elementary Schools to (*a*) Higher Elementary and (*b*) Secondary Schools" was then considered. Mr. Rowland Jones (Head Master of New End County School, Hampstead) pointed out that there was a large number of children who were compelled to attend the elementary schools and finish at the age of fourteen. He maintained that it was the duty of those interested in education to see what could be done to transfer the children of ability to schools where they could continue their education to a later year. A suitable age for transferring such children was eleven or twelve years. As to the method of selection, he would prefer to see a scheme of nomination in the place of examination. Miss E. E. Kyle (Vice-President of the Home and Colonial Training College, Highbury Hill) thought that some attempt should be made to test the character of the child at twelve. It would be a disadvantage to the community to maintain two distinct sets of secondary schools.

The English Association.

The first general meeting of the recently formed English Association was held at University College on January 12. The objects of the Association are: (1) to afford opportunities for intercourse and co-operation amongst all those interested in English language and literature; (2) to help to maintain the correct use of English, spoken and written; (3) to promote the due recognition of English as an essential element in the national education; (4) to discuss methods of teaching English and the correlation of school and university work; (5) to encourage and facilitate advanced study in English language and literature. Mr. Sidney Lee presided, and the attendance was large.

The Chairman said the general purpose of the Association was to secure for English subjects a foremost place in the curriculum of every school and college through the British Empire, and to provide means of direct intercourse and direct exchange of views among all readers, writers, and teachers who had faith in the power of English literature to humanize life and learning. In all educational institutions, from the elementary school to the university, they were anxious that the obligation should be recognized to treat the proper writing of English, the proper speaking of English, the proper appreciation and respect for English literature, as not less important, but more important, acquirements than any other that could come of educational training. He was quite aware there were difficulties in the way of realizing this idea. There were so many subjects to be taught besides English. The Association did not propose to urge the exclusion of any one of these topics from their due place. It advocated that, whatever other subjects were taught thoroughly, English should be taught thoroughly too. It was for the Association to devise means of meeting difficulties in the way of realizing this aim. It was a significant fact that at Harvard University, the oldest and one of the most active of American universities, there should be twenty Professors of English study in its various aspects, and at Oxford there should be practically only one, and that the Oxford Professor's pupils should be for the most part not undergraduate members of the University, but women students, who, although they were not allowed by that ancient foundation any academic status at all, yet were ahead of their brothers in intelligent zeal for English study. In advanced English scholarship America, Germany, and even France were out-doing England. The influence which the Association could, and must, if fitly organized, exert would extend far beyond educational institutions. It might reach those in control of public libraries.

Dr. H. F. Heath moved that a Central Committee should be elected annually, and that an Executive Committee of not fewer than twelve should be appointed by them from among their own members. Prof. A. C. Bradley, in seconding the motion, said that, if English was continued to be taught as it was, he would rather that it did not appear at all in national education. The motion was agreed to. Dr. T. Gregory Foster, Provost of University College, was appointed Chairman of the Central Committee.

The Modern Language Association.

(From our Special Correspondent.)

The Modern Language Association met at Durham, whither they had been kindly invited by the University, on January 3, 4, 5. The first evening was occupied by an informal reception in the Castle Common Room, and by a lecture on South Africa, by Mr. H. W. Atkinson, late Head Master of Pretoria Grammar School.

On January 4 the Association was cordially welcomed by the Warden of the University, the Dean of Durham. In the course of his address he said that they were met to confer on the right and the wrong way of making the study of French and German a real part of modern education, not a mere by-play stuck in at chance hours in the more established and antiquated method of teaching classics. Perhaps it would be most fair to say that all types of education had a tendency to close up the human intelligence, encouraging memory, damping down imagination, observation, and reasoning power; for memory was the danger of learning. Were they on the right lines, or were they still too much wedded to their traditional system?

Then Mr. A. C. Benson, of Magdalene College, Cambridge, till lately a master at Eton, the retiring President, delivered his presidential address, the subject being "The Place of Modern Studies in Public-School Education." He thought they were justified in considering the present condition of secondary education to be somewhat critical. There was a good deal of dissatisfaction, and there seemed to be a general consensus of opinion among educators that education was in urgent need of simplification. What they wanted was some correlation, some co-ordination: and it appeared to him the only solution was for educational reformers to agree upon some simple code of education which was well within the holding capacity of the average mind. He did not want to belittle the results of the classical system of the past. The objections he felt to the present system of learning classical languages were twofold. He thought the material, in the first place, was inadequate, because the ancient literature did not provide sufficient imaginative stimulus in the earlier stages: and, secondly, the method was unsatisfactory. He had long regarded it as an incontestable fact that the retention of two dead languages in a secondary curriculum was an impossibility. When one reflected on the vast intellectual expansion that had taken place within the last fifty years in religion, science, and history, and the immense output of modern literature, it seemed grotesque to confine the attention of boys to ancient masterpieces. The old theory of classical education was a dignified ideal, but it was no longer practicable. They stood at a somewhat critical point, and he had no sort of doubt himself that they might have a sudden expansion of modern education. The Association must claim to make a modern language an absolutely essential feature of all higher secondary education. For the average boy he thought it was sufficient to work on comparatively few studies. Besides religious knowledge, he would require arithmetic and some elementary mathematics, notions of science conveyed by lectures and demonstrations, English, universal history, geography, and one language besides his own, if possible two—one living and the other dead. One language should be studied at a time. Of the ancient languages he would naturally prefer Greek; but under existing conditions would retain Latin—it gave logical training, though not so strong in literature as Greek. While teaching Latin logically and grammatically, he would throw the real strength of linguistic training into French. A great advantage would be that subjects could thus be made to play into each other: for example, history could be read and questions asked on it in French. The point on which the Association should chiefly insist was that a modern language, thoroughly taught by entirely competent teachers, should be an essential feature of all higher secondary education.

Prof. Fiedler, of Birmingham, followed with an interesting paper on Shakespeare's "Tempest." His direct object was to combat the late Dr. Garnett's theory that it was written as a wedding masque for the marriage of the Princess Elizabeth and Frederick the Elector Palatine. The new evidence he produced was a contemporary letter written by one of the Elector's suite.

Then Mr. Somerville, of Eton, opened a debate on "Modern Languages in Civil Service Examinations." After pointing out some improvements in them already made, and some defects that remained still to be remedied, he entered upon the general question how far modern language teaching should be directed to the general education of the pupil, and should not be confined to imparting expertness in the practical use of the language. This raised a point in which the most ardent advocates of modern methods (the so-called *Neuere Richtung*) are at variance with many of their colleagues. There was not sufficient unanimity to carry with general consent a resolution on the subject formulated by the opener.

Next followed a paper by Mr. H. W. Atkinson on "The English and Dutch Languages in South Africa." He gave many interesting details about the Taal, in which were brought out examples of processes now at work illustrating the transformation of spoken Latin into French and other linguistic changes. Among them were the dropping of medial consonants, the regularizing of conjugations, and the insertion of a vowel in cases where the "glottal stop" exists in the primitive language, as in *canif*, from the Teutonic original of our *knife*.

After tea, Mr. F. Storr, the President-elect, opened a discussion on the order in which foreign languages should be taught. He put French first, after a good course of English, and Latin second, dwelling most on the importance of making adequate progress in one language before a second was begun. The discussion was continued by Mr. F. Fletcher, Head Master of Marlborough, who agreed on the whole with Mr. Storr, with a slight preference for Latin as the first language. Mr. H. W. Eve urged the claims of German as the first language, both because of its resemblance to our own in common words and forms of expression, and because of the adaptation of some of its best literature, such as Schiller's ballads, to young readers. He found no support.

The second day opened with an interesting paper on Drayton—a poet too little known—by Prof. Ellershaw, of the University of Durham. Mr. A. G. Latham followed with a paper entitled "Shall we abandon Translation?" He took what may be called a conservative line, and combated the idea prevalent among some of the most advanced adherents of reformed methods that anything is to be deprecated which interferes with the conduct of a lesson in a foreign language entirely in that language. He urged that teaching ought not to be "in watertight compartments," but that in all subjects general education and the accurate use of the mother tongue should be aimed at. Time did not allow of a discussion, and the proceedings were concluded by an address by Prof. Rippmann on "Speaking Reform and Spelling Reform." He dwelt on the importance of cultivating a standard pronunciation—that of the intelligent upper middle classes—in schools: a plan resembling that of the teachers who make phonetics the basis of their instruction in modern foreign languages. As to spelling reform, he quoted a saying of Mark Twain: "In words like 'phthisis,' 'pneumonia,' 'diphtheria,' &c., their spelling is so outrageous that no man addicted to a simple Christian life could write them without losing the bloom of his piety." He condemned the recent American attempts at reform as inadequate and premature, and looked forward for the solution of the problem to a generation trained in habits of clear and accurate speech.

North of England Education Conference.

The fifth annual meeting of the North of England Education Conference was held at Bradford on January 3, 4, and 5. Sir Albert K. Rollit, LL.D., D.C.L., Litt.D., was elected President. On January 4 and 5, the two working days, a united conference was held each morning—on the best curricula for secondary schools (January 4), and on the development of technical education in a large manufacturing centre (January 5). The sectional meetings discussed reforms needed in elementary education, the use and abuse of public examinations, the training of the colour sense in children, systematic courses in evening schools, and manual training in high schools, American and English (January 4); physical conditions of school-children, the teaching of geography, and the teaching of drawing in Paris primary, secondary, and apprentice schools (January 5).

One of the most fresh and distinctive subjects was "The Training of the Colour Sense in Children," on which papers were read by Mrs. Kirk, Head Mistress of the Belle Vue Infants' School, Bradford, and Mr. C. Stephenson, Principal of the Bradford City School of Art, developing in the main the educational and the commercial aspects of the question. At the Educational Exhibition held in connexion with the Conference a very large assortment of materials, simple apparatus, and aids for giving definite and systematic instruction—the want of which Mrs. Kirk had admitted to be a drawback in the past—was shown by Messrs. A. J. Arnold & Son (Leeds). The whole collection was prepared under the supervision of Mrs. Kirk, who has also written a practical guide for the assistance of teachers, which will shortly be published by Messrs. Arnold. "By means of an immense

number of illustrations, both in black and in colours," we learn, "this book shows how practical and logical instruction in colour may be given in connexion with all the ordinary work in infant and junior schools, with especial attention to the principles of hygiene and its bearings on school life."

TEACHERS IN L.C.C. SCHOOLS.

The annual Conference of Teachers in London County Schools was held on January 4 and 5 at the Medical Examination Hall, Victoria Embankment. There was a large attendance. Mr. A. J. Shepheard, Chairman of the Education Committee of the Council, having cordially welcomed the Conference, papers were read and discussed: "The Direct Method of Teaching Modern Languages" (Mr. L. C. von Glehn, Perse School, Cambridge); "The Application of Phonetics to Modern Language Teaching" (Mr. D. L. Savory, Goldsmiths' College); "Shakespeare in the Schools" (Prof. Gollancz); "Organized Games for Girls" and "Organized Games for Boys." Keen interest was taken in the proceedings.

EDUCATIONAL INSTITUTE OF SCOTLAND.

The annual Congress of the Educational Institute of Scotland was held at Dundee on January 3 and 4, Mr. John Mudie, F.E.I.S., in the chair. Mr. J. MacPherson Wattie, M.A., H.M.I.S., read a paper on "The Present Point of View in regard to Children and their Education." The following resolution was adopted unanimously:—"(1) That, in the interests of higher education, the requirements of the Preliminary Examination and the regulations regarding graduation in our Scottish Universities should be revised; and (2) that, meanwhile, the course of training for teachers should provide opportunities for (*a*) preparation for the University Preliminary Examination; (*b*) for graduation in Arts and in Science." Principal Mackay, University College, Dundee, spoke at length on the importance of the University to the larger industrial centres. Mrs. Ogilvie Gordon, D.Sc., Ph.D., explained a project for the establishment of a bureau for guidance of boys and girls to suitable occupations.

A NEW EDUCATION DEMANDED.

AN AMERICAN VIEW OF INDUSTRIAL NEEDS.

EVERY month (says the *School Journal*) brings us nearer to the recognition of the need of a speedy readjustment of the programmes of elementary and secondary schools. A new civilization is upon us with problems and ideals which could not even have been dreamed of by the makers of the traditional courses of study. In the economic field especially changes have taken place which amount to almost a revolution. We have seen the apprentice system disappear, and machine product takes the place of the product of the hand. The control of machinery requires a knowledge and skill for which there was no demand in the past. The anomalous condition presenting itself is with us that economic life expects individuals to possess a training for which no provision is made in the general scheme of education. The boy leaving school at fourteen or sixteen finding no apprentice period offered him, and, having obtained no training directly fitting him for a practical pursuit, must needs drift until by sheer strength of will and ingenuity he hews out for himself some definite life work. At best there is a tremendous waste of time and energy for want of specific direction. This danger, added to the fact that a large proportion of the graduates of our schools lack self-direction, will account for the vast number of unskilled labourers which threaten the industrial peace of the world.

There seems to be no place in present-day economy for "the average boy" as the past knew him. The reason for this is that life outside of the schoolroom took pains to prepare him by practical methods for useful pursuits. Now the burden of responsibility has been shifted upon the schools, but no adequate provision has been made to enable the schools to meet the new requirements. The industrial world has pocketed the savings accruing to it from the abolition of the apprentice system and has not properly endowed the institutions to which it looks for an assumption of its former responsibilities.

Financial support alone, however, will not solve the problem. The attitude of educators must adjust itself to the spirit of the present civilization before the schools can be safely entrusted with the wise expenditure of the funds. There must be a frank and full acknowledgment of the inadequacy of its additional literary programme. The gospel of education must be that manual skill is a surer equipment for the battle of life than turrets and swords; that freedom is vouchsafed to him only who can share productively in the labour of the world. As long as the designing brain is nurtured by an almost purely literary programme and willing hands are not given in school the encouragement of recognition, training, and reward, so long will there be industrial tyrants and a disheartened proletariat. The producer is in need of a definite form of intelligence which he can utilize to advantage in his special pursuit. The agent for the sale of the finished product is in need of that practical acquaintance with the methods of construction which will enable him to present his claims intelligently. The manufacturer must have an extensive knowledge of the industrial and commercial activities involved in his particular enterprise if he wants to be permanently successful; the ever increasing stress of competition will compel him to be thoroughly conversant with the economics of his enterprise.

Nowhere are the industrial needs more intelligently recognized than in Germany. The National Department of Commerce and Labour has recently issued a remarkable volume of special consular reports on "Industrial Education and Industrial Conditions in Germany" which is deserving of the most careful attention of all thoughtful people. England is making strenuous efforts to keep up with Germany in the extension of technical education. France and Italy, too, are wrestling with the problem. Japan also has entered the industrial arena. We in America can hardly afford to delay action.

REVIEWS.

THEODORUS STUDITES.

Theodore of Studium: his Life and Times. By Alice Gardner, Lecturer and Associate of Newnham College, Cambridge. (10s. 6d. net. Edward Arnold.)

Theodore was Abbot of Studium, and "in the south-west corner of the city of Constantinople, near to the Seven Towers and the Golden Gate, stands the mosque called Mir Achor Djami, formerly the basilica of St. John of the Studium. His life was passed between the years 759 and 826 A.D. He was born and bred in Constantinople, which was then "the focus of the best civilization that existed, and contained within itself enough of the ancient world to vindicate it from any suspicion of encroaching barbarism"; and, while the city was the great centre of all the movements and contests of the time, "the family into which he was born was, on both sides, intimately connected with the administration of the Imperial Government, and intensely susceptible to the religious influences around." Miss Gardner's description of Theodore's political and religious environment in early life effectively enables the reader to understand how he was prepared for the part he was to play in life as religious controversialist, as monastic reformer, and as party leader. The influence of an uncle, Plato, "brought about a renunciation of all secular life on the part of the whole family," and specially impressed young Theodore, in whom Miss Gardner notes also "one quality in which so many of his contemporaries were notably deficient—a single-heartedness in all his efforts and an entire loyalty to duty, sustained by a firm belief in his own vocation to serve the cause of righeousness and truth, the cause oppressed by all the forces of an autocratic government and an unsympathetic world." Notwithstanding the disorganization of Eastern monachism in those days, the first years of Theodore's profession were quiet and secluded. For thirteen years—from the age of twenty-two up to the age of thirty-five—he worked in all things with and under his uncle Plato, Abbot of Saccudio, and then (in 794), when Plato resigned the abbacy and became a private monk, Theodore succeeded him. Presently his first conflict with the civil power, over the marriage of Constantine VI., landed him an exile in Thessalonica; but he was restored after a turn of the political wheel, and became Abbot of Studium in 799.

Miss Gardner sketches the monastic rules and mode of life at Studium, developed by Theodore and his uncle from the system they had practised at Saccudio, and grafted on to the traditions of the place. We need refer only to the careful, industrious, and skilful copying of manuscripts—"perhaps for posterity the most important of the functions entrusted to any of the Studite monks." The services of Studium and of its daughter communities in this work are treated very interestingly in a later part of the volume. "The years occupied by the quiet constructive

work of Theodore and by the sole monarchy of Irene are memorable in universal history, since by studying them we can attain some comprehension, as to causes and immediate results, of the most portentous event of the Middle Ages, the coronation of Charles the Great as Emperor at Rome." Yet no hint of this event could be gathered from Theodore's letters, which reveal him in dead earnest over the slightly irregular election of a Patriarch and the rehabilitation of an unfrocked priest, the latter affair becoming the cause of a schism, and calling forth passionate appeals to distant authorities and efforts towards the formation of a party and a policy. Out of the trouble (A.D. 808) came a second exile of Theodore, which lasted till the death of the Emperor in battle against the Bulgarians (A.D. 811) and the accession of a favourable successor. A third exile (A.D. 815–821) arose out of the iconoclastic zeal of Leo V. The kernel of the controversy was the question "whether or no it is lawful for Christians to represent pictorially the figure of their Lord and to show reverence to such representation." Miss Gardner presents a discriminating analysis of the attitude of the disputants. More than any of the earlier controversies, it was a conflict between Church and State. From the personal point of view, "it brings to light Theodore's splendid powers of endurance, his indefatigable activity, and the paternal attitude, tender yet commanding, in which he stood towards the persons and the communities that looked to him for encouragement and guidance." The last four years of Theodore are more obscure; but it is evident that he was faithful, unselfish, and strenuous to the last. His narrow outlook admitted, Miss Gardner, like most students, still calls him a great man—a Puritan of the olden time. If it appears paradoxical to call him a Puritan when he devoted his life to the maintenance in religious worship of institutions that English Puritanism branded as idolatrous, it has yet to be remembered that he "only upholds the icons because certain doctrines to which he attached great value seemed to stand or to fall with them"; he was no devotee of sacred art, nor did he use the icons much, or value them greatly, as helps to devotion. "In giving spiritual advice on prayer, he thinks of the soul and mind of the person, not of any surrounding objects."

The life of this picturesque and strong man is presented by Miss Gardner in the just historical spirit. Her scholarly and lucid treatment of the religious and political questions at issue will be valued as a fresh and independent contribution to the history of a troublous and confused period. Occasionally illustrative matter is disposed conveniently in appendixes to various chapters. There are eight illustrations, mainly showing aspects of the church of St. John of the Studium.

University Study in Germany.

The German Universities and University Study. By Friedrich Paulsen, Professor of Philosophy in the University of Berlin. Authorized Translation by Frank Thilly, Professor of Psychology in Princeton University, and William W. Elwang. With a Preface specially written for the English Edition by M. E. Sadler, Hon. LL.D. Columbia University, &c., Professor of History and Administration of Education, Victoria University of Manchester. (15s. net. Longmans.)

Prof. Paulsen, who is recognized as the greatest living authority upon the history of higher education in German-speaking lands, says his work "is intended for the academic youth of our [the German] nation; its primary aim is to serve as guide and counsellor to the student who is looking for general information in the domain which he enters upon matriculation." It is meant to be a comprehensive guide-book to the German student. It may also prove similarly instructive to the foreigner, who may be regarded as on the level of the student entrant in point of knowledge of the subject. First, there is an introductory sketch of the general character of the German universities, differentiating the German type from the English and the French. Then the subject is handled in five books. The first (pages 13–67) traces the historical development of the German universities from the Middle Ages down to the present time. The second (pages 71–159) explains the modern organization of the institutions and their place in public life—their legal status, their relation to the State, to society, and to the Church. The third (pages 163–262) deals with the teachers, the instruction, and the principle of *Lehrfreiheit*. The fourth (pages 265–378) is concerned with the student and the multifarious phases and questions of academic study and academic life. The fifth (pages 381–435) surveys the ground covered by the several faculties, with an eye upon the practical professions to which they lead. The work is a large and free expansion of the outline presented in the introductory part of the compilation accompanying the German educational exhibit at Chicago in 1893—an outline translated by Prof. Perry, of Columbia College, and published by Messrs. Macmillan in 1895.

The volume is authoritative within its limits, and these limits are comprehensive enough in point of historical and descriptive handling. It is systematic, too, as may be seen from the general outline of its disposition of subjects; but there is no express account of any one university, though particulars about most of them can be gathered from scattered references in the general description. The treatment is popularly discursive, with frequent argument for or against this or that academic institution, development, or tendency. With all deductions, the work is most instructive and readable. The main points of practical value for the educationists of other countries, and particularly of this country, are effectively set forth by Prof. Sadler in a substantial preface. Dr. Sadler points out three chief causes to which the German universities owe their scientific distinction and popular estimation: very eminent teachers, competent financial aid from the State, and intellectual freedom and independence. "Each of these factors has been indispensable to their success." He properly declares, however, that "it is the inner tradition of German university life, the spirit which animates and controls them, that most deserves study and excites our admiration. The German universities have become strong and great through untiring devotion to science, through belief in the power of education, through resolute defence of intellectual freedom, and through a sense of personal obligation to the claims of the State." Now more than ever has German experience in organizing intellectual activities a close bearing upon British needs, offering both warning and example. We need not follow in detail the chief and the minor contrasts between the systems: "the essential difference lies rather in spirit and in intellectual outlook than in forms of organization." Nor need we state or discuss even outstanding points in Prof. Paulsen's volume: the work should be read and digested by all our educationists, and especially by such as possess a determining influence upon the course of our higher educational development.

"Easy Mathematics."

Easy Mathematics. By Sir Oliver Lodge, F.R.S. (4s. 6d. Macmillan.)

The author has something to say, and knows well how to say it with force and originality; it is therefore to be hoped that his recognized influence in educational matters will prevent the modest title from causing the work to pass unnoticed by many to whom it would be valuable. He addresses himself to those who have to teach either others or themselves. Let things and not words, the living principle and not the accidental shape in which it ordinarily presents itself, be the primary object of study—this gives in brief the central idea of the work. The elements of many branches of mathematics form in succession themes for discussion, but arithmetic claims a special share of attention. Beginning at the very beginning, the author gives to teachers invaluable lessons in the method of imparting instruction in numeration, notation, and the first four rules. The principles of numeration and notation are to be taught with a breadth that demonstrates the ability to apply them to any scale of notation; the decimal system indeed is to be made to rank as one of many scales, rather than as a system possessing unique properties and suitable above all others for the purpose it is made to serve. In fact, as bearing on this and other parts of arithmetic, the writer is most careful to point out, with Herbert Spencer, the inferiority of an established decimal system as compared with an established duodecimal system. Nevertheless, Sir Oliver Lodge adopts a more practical view than Spencer, and at this stage would have the world frankly accept as unalterable the decimal system, and would persuade the British Empire to adapt its weights and measures to the decimal principles of the metric system. It is interesting to note that the author lays down as a principle of teaching the duty of not wearying children with problems from which every element of real interest is absent and which offer only the purely mechanical difficulties attending long and tedious calculations. Undoubtedly, skill in calculation is not merely valuable, but necessary; yet let it be acquired in the right, and not in the wrong, way. The writer cautions teachers against setting down as dull a child who fails to understand any given explanation of a point and who has the courage to ask questions about what seems puzzling. For the

failure to understand let the teacher be ready to hold the method of explanation responsible; let him acknowledge that possibly his own familiarity with the matter in hand may have made him overlook the difficulty of the beginner trying for the first time to grasp a fresh idea. The asking of questions should always be encouraged as a sign of intelligent interest.

Page after page of Sir Oliver's book shows the professional teacher and the self-educating student how to extract for the benefit of the pupil the essence of the immediate object of investigation. Now it is an arithmetical process which is examined, now it is the laws which govern equations that are sought, and the effect of given operations is studied to see whether such operations tend to preserve or to destroy the existing equality; later it is the principles of logarithms and the value of their use which engage the attention. But the reader must go to the work itself. Repeatedly the following important points are emphasized:—(1) that a broad distinction must be drawn between names which are essential and indicate fundamental truths and names that are arbitrary and are to be remembered simply because they are convenient labels; (2) that *properly* nothing is taught only to be contradicted later, but that the same principle may be looked at in different ways, according as it to be considered on the one hand merely for its own sake, or on the other as a stepping-stone to what is higher. Towards the close of the volume the author definitely turns his attention to the applications of mathematics, and furnishes a most interesting introduction to problems in physics and to the calculus. It may be observed here that the writer is a strong advocate of the use of equations between concrete quantities themselves, and not between their numerical measures only. The point is one that is open to discussion, and he is conscious of differing from the tenets of a large number of teachers of standing not inferior to his own.

STUDIES IN GEOLOGY.

The Age of the Earth, and other Geological Studies. By W. J. Sollas, D.Sc. Cantab., LL.D. Dubl., M.A. Oxon., F.R.S., Fellow of University College and Professor of Geology in the University of Oxford. (10s. 6d. net. T. Fisher Unwin.)

Prof. Sollas has gathered into a volume ten essays, lectures or addresses mostly, some of which have already appeared in scientific journals. Three or four, indeed, are entirely new, while the rest have been revised and expanded. The article giving title to the volume was originally a presidential address to the Geological Section of the British Association at Bradford, and its matter goes a considerable way beyond the implications of the formal title. The second article, on the Figure of the Earth, may be regarded as a continuation of the first, with amplifications and qualifications: it presents a fresh conception of the form of the Earth, "arrived at independently by two investigators, one [Mr. J. H. Jeans, Fellow of Trinity College, Cambridge] following the legitimate but strenuous path of the higher mathematics, and the other [Prof. Sollas himself] snatching at a result by pure empiricism." A lively descriptive article on an autumn visit to the Lipari Isles includes an attempt to account for the explosive character of a volcanic eruption on simple mechanical principles. Two articles on "Funafuti" narrate (1) an unsuccessful attempt to bore through a Pacific coral reef in order to settle a prolonged controversy, and (2) a successful effort, with results confirming the truth of Darwin's theory. An extremely interesting article on the origin and formation of flints gives, perhaps for the first time, a connected account of the results of observations and discoveries extending over a long series of years upon "that puzzling object, the common flint." A paper on the origin of fresh-water animals seeks to explain "how marine animals contrived to obtain a home in rivers and lakes, or how they became captives of the fresh-water domain, the shifts they are put to in maintaining their foothold, and the complications which result." Prof. Sollas endeavours to do justice to the genius of Steno of Bologna, in his inaugural lecture at Oxford, and to "the fundamental discovery" of William Smith, in a Royal Institution lecture." The final paper surveys the influence of geology on the question of the Deluge and of the Deluge on the theories of geology, and discusses the latest views of Suess as to the nature of the great catastrophe. Except at occasional points, the layman will have no difficulty in following the argument: the statement and the exposition are simple and lucid, and the tone is good-natured and often humorous, even when the author is forcibly disapproving of an opponent. He criticizes Lyell, Huxley, and Suess with perfect frankness, but without a trace of bitterness. As for the quality of the discussions, that is beyond our criticism: it is manifestly of the first rank. The variety of the matter gives a wide interest to the volume. Besides the frontispiece, there are 98 pertinent and instructive illustrations.

GENERAL NOTICES.

CLASSICS.

The Frogs of Aristophanes. Edited by T. G. Tucker, Litt.D., Professor of Classical Philology in the University of Melbourne, late Fellow of St. John's College, Cambridge. (3s. 6d. net. Macmillan. "Classical Series.")

Prof. Tucker has carefully revised the text, and placed a considerable array of critical notes at the foot of the page; "fortunately," however, "but little textual innovation is anywhere needed." The commentary is very ample, dealing carefully with all aspects of the matter, and not outrunning the pupil nor yet overloading him. The introduction discusses the date and the motives of the play, the Mysteries referred to in it, the language and the metre of Comedy, some main features of the comic style, and the text. The section on the Mysteries is reprinted, with very slight alterations, from the *Classical Review*. Prof. Tucker tries to place himself in the position of the pupil at the stage that the book is intended for. He does not limit himself to second aorists and particles. "The present work, therefore, attempts not only a due consideration of the language, but also exegesis of the play as a live creation of wit and humour presented in an actual theatre before an actual audience of intelligent and rather critical people." It is an excellent addition to an able and useful series.

The Andromache of Euripides. Edited by Gilbert Norwood, B.A., Fellow of St. John's College, Cambridge, and Assistant Lecturer in Classics in the Victoria University of Manchester. (2s. 6d. Murray.)

Writing "with a view to the requirements of the higher forms in schools and younger pass-students at the Universities," Mr. Norwood has "tried, to a greater extent than seems customary in editions of this elementary nature, to interpret the teaching of Euripides as well as to explain his words." At the same time he has explained words, idioms, and allusions adequately, and in a plain and simple manner, without cumbering the page with futile references to other sources of information. The notes, in fact, are sensible as well as scholarly. A pretty long introduction gives some account of Greek Tragedy, of Euripides and his characteristics, and of the particular play—a very useful and suggestive sketch. Altogether an excellent and attractive edition.

MATHEMATICS.

A New Trigonometry. By R. F. D'Arcy, M.A. (2s. 6d. Methuen.)

A good and valuable little work on the subject. In determining its scope the author considered principally the requirements of candidates for the Cambridge Previous and the Cambridge General Examinations. The text is really more than sufficient for the purpose of these examinations, but guidance as to the portions which may be omitted is afforded. In certain respects a new departure has perhaps been made by the writer; for he attaches great value, from the point of view of trigonometry, to experiments in practical geometry, and he also prefers to give rather less prominence than usual to the treatment of special angles. In order to derive full advantage from the course, students will find it necessary to make their own scale diagrams—a practice of obvious importance. Numerous exercises have been provided.

A New Algebra, as far as the Binomial Theorem, including Chapters on Graphs. By George Collar, B.A., B.Sc., Head Master of the Battersea Pupil-Teacher School. (4s. 6d. Meiklejohn & Holden.)

Mr. Collar embodies in this work the results of much teaching experience and mathematical ability. His treatment of the subject is fully abreast of the time in point of sound method, and he places the emphasis of exposition with great judgment. From the very first he guides his students to right conceptions and improved methods, with adequate and lucid explanation. Examples are abundant, many of them culled from recent papers of various examining bodies; and answers are appended. An able, careful, and attractive work.

New Number Exercises. Book VII. (Oliver & Boyd.)

The compilation is complete in seven "Books." Each Part contains work for either one or two years, according as the pupil is apt or slow in acquiring a knowledge of arithmetic. A leading feature of the scheme of arrangement is the overlapping of the contents of consecutive volumes, so that in any three the middle one revises what is treated in the first, and introduces the ideas that are to be developed in connexion with the third.

SCIENCE.

The Elements of Geology. By William Harmon Norton, Professor of Geology in Cornell College. (6s. 6d. Ginn.)

After an introduction on the scope and aim of geology, Prof. Norton divides his book into three parts, treating severally of external geological agencies (water, wind, glaciers, &c.), internal geological agencies (earthquakes, volcanoes, &c.), and historical geology. His main object is to give a "very simple outline, in which causes and their consequences are knit together as closely as possible," and so "to afford an efficient discipline in inductive reasoning." This he has done with marked ability, and so lucidly and simply that the treatment might well be regarded as popular. The book forms an admirable introduction to the subject. A number of practical exercises are inserted, exemplary rather than exhaustive. In the section on Historical Geology there is presented a broad view of the development of the North American continent and of the evolution of life upon the planet. "By omitting much technical detail of a mineralogical and palæontological nature, and by confining the field of view almost wholly to our continent," he says, "space has been obtained to give what are deemed for beginners the essentials of the science a fuller treatment than perhaps is common." There are 374 figures, and paper, type, and get-up are excellent.

Mr. Murray issues a new and enlarged edition of *Electric Wiring: a Primer for the use of Wiremen and Students*, by W. C. Clinton, B.Sc. Lond. (2s.). There are eighty-eight illustrations and a selection of worked examples. This is the fourth edition in four years—a sufficient testimony to the practical utility of the book.

ENGLISH LITERATURE.

"The Oxford Poets."—(1) *The Poetical Works of Oliver Goldsmith.* Edited, with an Introduction, Notes, and Appendixes, by Austin Dobson, Hon. LL.D. Edin. (2) *The Poetical Works of Thomas Hood.* Edited, with an Introduction, by Walter Jerrold. (3s. 6d. each. Frowde.)

(1) Though this Oxford Goldsmith is stated to be "a reprint, revised and extended, of the 'Selected Poems' of Goldsmith issued by the Clarendon Press in 1887," we should rather call it a new work on the basis of the other. It contains the whole of Goldsmith's poetry, and the annotation occupies not much less than half the volume, the bulk of the new editorial matter having been "collected at odd times during the last twenty years," and the whole of it being valuably illustrative. The introduction is very full and thoroughly well informed. The frontispiece is excellently reproduced from Joseph Marchi's mezzotint of 1770 after the portrait of Goldsmith by Reynolds, and there are twenty other illustrations. (2) The Hood makes a thick volume of little short of 800 closely printed pages, containing a fuller collection of the poet's writings than has hitherto been published. Mr. Jerrold has recovered a few poems from periodicals, and some half dozen new poems from manuscripts. He breaks away from the "serious" and "comic" classification, and gives the poems in a certain chronological order. The notes are brief, but useful. The volume has been edited with great care and industry. The frontispiece is a good reproduction of a portrait of the poet in the National Portrait Gallery. One need wish no better editions than those of the "Oxford" series.

"The Golden Poets." Edited by Oliphant Smeaton.—(1) *Longfellow.* Selected and Introduced by Prof. George Saintsbury, LL.D. (2) *Coleridge.* Selected and Introduced by Prof. Edward Dowden, LL.D. (3) *Scott.* Selected and Introduced by Oliphant Smeaton, M.A. (2s. 6d. net each. Jack.)

(1) Prof. Saintsbury's introduction is critically breezy and slipshod in expression, and accordingly characteristic. There are many points where one feels inclined to break a lance with him, but it is enough that he confesses that he made up his mind long ago "that the critic who pooh-poohs Longfellow's poetry is a bad critic." His review of the poet's literary activity is well worth patient perusal, and his selections are judiciously made. Frontispiece and vignette title by A. S. Hartrick and 8 coloured illustrations by Alan Wright. (2) Prof. Dowden's introduction is discriminatingly appreciative, with sidelights of criticism upon the romantic movement, and the selections are fairly representative. Frontispiece and vignette title by A. S. Hartrick, and 8 coloured illustrations by Charles Pears. (3) Mr. Smeaton's introduction is mainly biographical, with some general points of criticism of Scott as a painter of life and manners and as a metrical romancist. The selections are very satisfactory. Frontispiece and vignette title by A. S. Hartrick, and 8 coloured illustrations by A. S. Forrest.

"Everyman's Library."—*The Everyman Shakespeare.* In three volumes. (1s. net each. Dent.)

The special issue of the works of Shakespeare in three volumes at a shilling apiece is the highest reach of "Everyman's Library," and surely of cheap literature enterprise. No. 153 contains the Comedies, No. 154 the Histories and the Poems, No. 155 the Tragedies; and each volume has its own glossary. The pages number roughly 850, 890, and 990. The type is liberal, and the binding is chaste and flexible. The set would make a nice gift at Christmas or the New Year—or on any other occasion of expansiveness.

STORIES FOR THE YOUNG.

"The Little Ones' Library" (1d. each volume; Horace Marshall) is very similar to Mr. Stead's series of "Books for the Bairns." There is (1) *Puss in Boots*, &c.; (2) *Old Mother Hubbard*, &c.; (3) *The Snow Queen*, &c.; (4) *Bluebeard*, &c.; with an indefinite number to follow. The language is suitably simple; the type is liberal, and the illustrations are numerous and distinctive. The books are remarkably good value for the penny, and we have no doubt that the little ones will recognize the fact.

"Cassell's Fairy Tale Series" (6d. each) is attractively got up, with excellent print on good paper, coloured plates and other good illustrations, and limp cover. Books I. and II. consist of *Fairy Tales for Little Folks*; Book III., *Stories from Grimms' Fairy Tales*; Book IV., *Stories from Andersen's Fairy Tales*; and Book V., *Stories of King Arthur.* They are well worth the money, and are sure to be widely popular.

"Littlo Wideawake Series for School and Home," edited by M. T. Yates (6d. each; Aldine Publishing Company), runs on similar lines. The stories are simply written; the paper and print are good; the illustrations are numerous; and the limp binding is strong. (1) *The Little Red Riding Hood Fairy Book*, with 64 illustrations; (2) *Grimms' Fairy Stories*, with 54 illustrations; and (3) *Hans Andersen's Fairy Tales*, with 66 illustrations.—This series also will be gladly welcomed by the "little wideawakes."

"Told to the Children Series," edited by Louey Chisholm (1s. net each; Jack), is as charming a series as children could desire—simply told, beautifully printed in antique type, agreeably illustrated, and substantially and artistically bound. Here are four fresh additions: (1) *Stories from Hans Andersen*, by Mary Macgregor, with 8 pictures in colour by Olive Allen; (2) *Tanglewood Tales* (Hawthorne), by C. E. Smith, with 8 pictures in colour by Olive Allen; (3) *Stories from Don Quixote*, by John Lang, with eight pictures in colours by F. M. B. Blaikie; and *Stories from Grimm*, by Amy Steedman, with 8 pictures in colours by Harry Rowntree. The children will be delighted with these dainty and interesting volumes.

"The Children's Heroes Series," edited by John Lang (1s. 6d. net each; Jack), is similar to the "Told to the Children Series" in type and get-up. Each volume tells in simple and vivid style the story of some person that has distinguished himself (or herself) by great deeds; and is illustrated by eight pictures in colour by a well known artist. There is No. 1, *The Story of Joan of Arc*, by Andrew Lang, pictures by J. Jellicoe; No. 2, *The Story of David Livingstone*, by Vautier Golding, pictures by L. D. Luard; No. 3, *The Story of Captain Cook*, by John Lang, pictures by W. B. Robinson; No. 4, *The Story of Nelson*, by Edmund Francis Sellar, pictures by Monro S. Orr; No. 6, *The Story of Sir Walter Raleigh*, by Margaret Duncan Kelly, B.A., pictures by T. H. Robinson; and, No. 8, *The Story of General Gordon*, by Jeanie Lang, pictures by W. B. Robinson.

The World's Childhood, by M. B. Synge (who has already told "The Story of the World" for young readers), is presented in two delightful volumes, containing: (1) Stories of the Fairies—19 of them ("Little Red Riding Hood," "The Three Bears," "Cinderella," and the like)—and (2) Stories of the Greek Gods and Heroes—20 of them. The stories are simply told, in a form suited to Standards I. and II.; there are many illustrations, by Brinsley le Fanu; and the type and get-up leave nothing to be desired. We scarcely like the division of words of more than one syllable, especially in the second volume, and we particularly object to "The-se-us" and "Or-phe-us." Otherwise the volumes are very attractive.

Favourite Greek Myths, by Lilian Stoughton Hyde (1s. 6d.; Harrap), are told to young readers in some sixty stories or chapters, illustrated by a dozen excellent pictures reproduced from famous sculptures and paintings. A pronouncing and explanatory index is appended. A charming volume, well written and spaciously printed.

Pippa's Holiday, and other Stories for Children, by Wontrina A. Bono (2s. 6d.; Curwen), are "the outcome of practical work in the Kindergarten, Transition, and First Form Rooms." "Pippa's Holiday" and two other stories are from Browning; three more are from "Hiawatha." There are stories of the Spirit of the Ganges, of Prince Siddârtha, of Richard Lion Heart, Raleigh, and Nelson; and there are stories suggesting the use of songs, pictures, &c. An interesting collection.

School and Garden, by Walter P. Knight, Horticultural Superintendent under the Kent County Council (6d.; Cassell), consists of two parts: (1) a Gardening Story, the lessons emerging in it being summarized at the end of each chapter; and (2) Practical Lessons, the implements and processes being fully illustrated. A very useful little book.

HISTORY.

Cromwell: the Campaigns of Edge Hill, Marston Moor, Naseby, and 1648 in the North of England. By Captain P. A. Charrier, Royal Munster Fusiliers. (6s. Relfe.)

Captain Charrier considers that Cromwell "is still the greatest cavalry leader Europe has produced, and he was also a perfect army leader." However this may be, his campaigns are certainly well worth studying. Captain Charrier here gives a brief outline of the four campaigns he deals with, and lodges in a pocket of the cover twenty-three illustrative sketch plans. The work will be most helpful to Army pupils, and also to teachers and private students.

Messrs. Ginn issue a revised edition of the *General History for Colleges and High Schools*, by Philip van Ness Myers (7s. 6d.), which is really a shortened edition of the revised and largely rewritten texts of the author's "Ancient History" and "Mediæval and Modern History," with several fresh chapters and other special additions. "The new text brings the narrative of events down to the Peace of Portsmouth and the elections to the first Russian Parliament, and aims to include all the latest important results of discovery and scholarly research in the different historical fields and periods." It is a very laborious, capable, and careful compendium; and at the end of each chapter are lists of (1) selections from the sources, (2) secondary works, and (3) topics for class reports. There are 30 coloured maps, practically new, 5 sketch maps, and 162 illustrations in the text.—*Outlines of Nineteenth Century History* (2s. 6d., Ginn) is a handy separate issue of those chapters of Mr. P. van Ness Myers's "Mediæval and Modern History" that cover events from 1815 to the end of the century. There are 8 excellent maps and 18 rather poor illustrations, and the volume is well got up.

We welcome a seventh edition, revised and enlarged, of *Germany*, by S. Baring-Gould, M.A., with the collaboration of Arthur Gilman, M.A., in "The Story of the Nations" series (5s., Fisher Unwin). There are well over a hundred good illustrations. The volume fully deserves its popularity.

MENTAL AND MORAL SCIENCE.

An Analysis of Human Motive. By F. Carrel. (5s. net. Simpkin, Marshall.)

"The objects of this treatise," the author tells us, "are to enquire in what manner human conduct results from certain fundamental motives; to investigate such motives; to seek towards what ultimate end they tend and by what course the best conditions of that end may be produced." The first causes of motives he finds to be (1) cosmographical and geographical conditions, (2) the composition and construction of the human body, (3) the cerebral neuronic and muscular construction of the human body, and (4) heredity—the four having approximately equal shares in the formation of motives. The fundamental motives—the motives that influence the greatest number of human acts—are enumerated as six: sustenance, sex, pleasure, self-love, sympathy, religion, in the order of relative importance in the general plan of conduct, though this order is liable to be introverted in individual cases. Each of the six motives is considered in a separate chapter; and so also is curiosity, which, though usually assignable to the pleasure motive, yet possesses a markedly distinctive character. Then there is the conflict of motives, restraints upon motives, goodness and badness of motives, and the relations of motives to emotions, to some moral systems, and to education. An efficient moral education "must give reasons for its admonitions drawn from the relations between cause and effect in the whole range of natural phenomena." The general conclusions are drawn out in the closing chapter. The exposition is full, instructive, and cautiously expressed. Though indications of opinion here and there may evoke hesitation or dissent, the whole body of fact and reasoning is instructive and suggestive. It is a sober, earnest, and impersonal inquiry of much ability.

Ethics and Moral Science. By L. Lévy-Bruhl, Chargé de Cours à l'Université de Paris, Professeur à l'Ecole libre des Sciences politiques. Translated by Elizabeth Lee. (6s. net. Constable.)

M. Lévy-Bruhl contends strenuously that theoretical ethics has not and cannot have any existence; examines the theoretical ethics actually recognised and the functions performed by such ethics in the past, and considers on what theoretical sciences ethical practice depends. He then investigates the historical antecedents of moral science, natural ethics, and ethical feeling, and sums up practical results. He applies to societies, as well as to individuals, George Eliot's remark that "we are all born in moral stupidity," and holds that, "if we desire to get out of that condition, science alone offers us a chance of success." "If, according to Descartes, ethics is an art comparable with mechanics and medicine, the art will make use of the knowledge of sociological and psychological laws to improve existing manners and institutions, just as mechanics and medicine utilize the knowledge of mathematical, physical, chemical, and biological laws." The whole exposition is remarkably lucid and suggestive, whether or not the reader will eventually see eye to eye with the expounder. The importance of historical considerations in the widest sense is effectively urged and illustrated, and possible objections are very frankly met and discussed. It is eminently a suggestive treatise; and it handles the subject in a simple and popular manner without sacrifice of scientific strictness.

A third edition of *Logic, Deductive and Inductive*, by Carveth Read, M.A., Grote Professor of Philosophy of Mind and Logic in University College, London (6s., Moring), is chiefly notable for the addition of a considerable body of questions, mainly taken from public examination papers. There is also a brief list of errata discovered on revision. The treatise is a signally good text-book, entirely deserving its popularity.

The new edition of *Psychology for Teachers*, by C. Lloyd Morgan, LL.D., F.R.S., Principal of University College, Bristol (4s. 6d., Edward Arnold), is practically a new work, so largely has it been recast and rewritten to bring it abreast of the time. The treatment is lucid and vigorous, and the book ought to be studied by every teacher in the course of preparation for professional work.

MISCELLANEOUS.

Annals of the Corinthian Football Club, edited by B. O. Corbett (5s. net, Longmans), is a volume of keen interest to all that care for scientific sport untainted by professionalism or pot-hunting. It is a fine record of a quarter of a century's sustained effort in illustration of the true game. There is the story of the club, character sketches (with photographs) of some of the more distinguished members, a narrative of half a dozen foreign tours, hints on the game in seven aspects by seven eminent performers, results of matches played, &c. Mr. Corbett has edited the volume with great discretion. There are numerous good illustrations.

Mr. T. E. Harvey, Deputy Warden of Toynbee Hall, has put together in a brochure some facts illustrating *A London Boy's Saturday* (6d. net, St. George Press), mainly from some hundreds of descriptive essays written by boys of many different elementary schools. A dozen specimens are given; the rest are commented on. Some girls' essays were also obtained, most of the girls, however, being tied to house work of one kind and another. Narrow though the basis is, the pamphlet is very suggestive. "One sees how the work into which a boy has drifted or been forced on his Saturdays may determine his after-life." "And then one cannot but be struck by the way in which the free time of the ordinary London boy is mis-spent, simply because he does not know how to use the resources at his disposal, and has no one to help him." Mr. Harvey wants some arrangement—some committee—"which will deal with children less in great masses and more as individuals." If indeed sufficiently prudent committees can be got; but there are disadvantages also in over-managing people, young and old.

Among Messrs. Watts's recent publications are—(1, 2): in the series of "R.P.A. Cheap Reprints," No. 27, *The Evolution of Man* Vol. II. (Human Stem-History or Phylogeny), by Prof. Ernst Haeckel, with 199 illustrations; and No. 28, *Hume's Essays* (1, An Inquiry concerning Human Understanding; and, 2, an Inquiry concerning the Principles of Morals)—including the famous essay on Miracles.—(3, 4) In the "R.P.A. Extra Series": No. 10, *Religious Persecution*, "a study in Political Psychology," by E. S. P. Haynes, late Scholar of Balliol College, Oxford; and No. 11, *The Oldest Laws in the World*, by Chilperic Edwards—an account of the Hammurabi Code, and the Sinaitic legislation, with complete translation of the great Babylonian inscription discovered at Susa (1901).—(5) An unabridged edition of Paine's *Rights of Man*, very carefully edited by Mrs. H. Bradlaugh-Bonner.—(6) *Socialism: its Fallacies and Dangers*, a collection of 16 papers (with 2 appendixes)—"the independent productions of contributors to the *Liberty Review*"—edited by Frederick Millar, and issued by Messrs. Watts for the Liberty and Property Defence League.—(7) *A Few Footprints*, by J. Passmore Edwards—a second edition.—6d. each.

FIRST GLANCES.

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Latin Unseens. Selected and arranged by E. C. Marchant, M.A., Fellow of Lincoln College, Oxford, and late Classical Master at St. Paul's School. 1s. Bell.

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Thucydides, Book VI., Selections from. Edited, for beginners, with Introduction, Notes, Vocabulary, and Maps, by Percy Ure, Assistant Lecturer in Greek, University College, Cardiff. 2s. 6d. Murray.

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SCIENCE.

Electricity and Magnetism, Examples in the Mathematical Theory of. By J. G. Leathem, M.A., D.Sc., Fellow and Lecturer of St. John's College, Cambridge, and University Lecturer in Mathematics. 1s. 6d. Edward Arnold.

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MATHEMATICS.

16083. (Professor Sanjána, M.A.)—Prove that the infinite product

$$\left(1\mp\frac{n^2}{1^2}\right)\left(1\mp\frac{n^2}{2^2}\right)\left(1\mp\frac{n^2}{4^2}\right)\left(1\mp\frac{n^2}{5^2}\right)\left(1\mp\frac{n^2}{7}\right)\left(1\mp\frac{n^2}{8^2}\right)\left(1\mp\frac{n^2}{10^2}\right)\ldots$$

$$=\tfrac{1}{3}\left(2\begin{matrix}\cos\\ \cosh\end{matrix}\tfrac{2}{3}\pi n+1\right).$$

Solutions by (I.) M. V. Arunachalan, M.A.; (II.) *by* C. M. Ross.

I.) From the form for $\cos\theta$ as an infinite product, viz.,

$$\cos\theta=\prod_{n=1}^{n=\infty}[1-4\theta^2/(2n-1)^2\pi^2],$$

we easily deduce

$$(\cos\phi+\cos\theta)/(1+\cos\theta)=\Pi\left\{1-\phi^2/[(2n-1)\pi\pm\theta]^2\right\}\ \ldots\ldots\ldots(1)$$

(*vide* Chrystal, Part II., p. 359, Ex. 18). In (1) put $\phi=\frac{2}{3}n\pi$ and $\theta=\frac{1}{3}\pi$: we get

$$\tfrac{1}{3}(2\cos\tfrac{2}{3}\pi n+1)=\prod_{r=1}^{r=\infty}\left(1-\frac{\frac{1}{9}(4n^2)}{(2r-1\pm\frac{1}{3})^2}\right)=\prod_{r=1}^{r=\infty}\left(1-\frac{n^2}{(3n-\frac{1}{2})^2}\right)$$

$$=\left(1-\frac{n^2}{1^2}\right)\left(1-\frac{n^2}{2^2}\right)\left(1-\frac{n}{4^2}\right)\left(1-\frac{n^2}{5^2}\right)\ldots.$$

In (1) put $\phi=\frac{2}{3}in\pi$ and $\theta=\frac{1}{3}\pi$. Then we get

$$\tfrac{1}{3}(2\cosh\tfrac{2}{3}\pi n+1)=\left(1+\frac{n^2}{1^2}\right)\left(1+\frac{n^2}{2^2}\right)\left(1+\frac{n^2}{4^2}\right)\left(1+\frac{n^2}{5^2}\right)\ldots.$$

(II.) (i.) $\sin\theta=\theta\left(1-\frac{\theta^2}{\pi^2}\right)\left(1-\frac{\theta^2}{2^2.\pi^2}\right)\left(1-\frac{\theta^2}{3^2.\pi^2}\right)\ldots.$

Put $\theta=\pi n$; then

$$\sin\pi n=\pi n\left(1-\frac{n^2}{1^2}\right)\left(1-\frac{n^2}{2^2}\right)\left(1-\frac{n^2}{3^2}\right)\ldots\ldots\ldots\ldots\ldots\ldots(1).$$

Again, put $\theta=\frac{1}{3}\pi n$; then

$$\sin\tfrac{1}{3}\pi n=\tfrac{1}{3}\pi n\left(1-\frac{n^2}{3^2.1^2}\right)\left(1-\frac{n^2}{3^2.2^2}\right)\left(1-\frac{n^2}{3^2.3^2}\right)\ldots\ldots\ldots(2).$$

Therefore (1)/(2) gives

$$\frac{\sin\pi n}{\sin\frac{1}{3}\pi n}=3\left(1-\frac{n^2}{1^2}\right)\left(1-\frac{n^2}{2^2}\right)\left(1-\frac{n^2}{4^2}\right)\left(1-\frac{n^2}{5^2}\right)\left(1-\frac{n^2}{7^2}\right)\ldots;$$

therefore $\tfrac{1}{3}(2\cos\tfrac{2}{3}\pi n+1)=\left(1-\frac{n^2}{1^2}\right)\left(1-\frac{n^2}{2^2}\right)\left(1-\frac{n^2}{4^2}\right)\ldots,$

since $$\frac{\sin\pi n}{\sin\frac{1}{3}\pi n}=3-4\sin^2\tfrac{1}{3}\pi n.$$

(ii.) $\sinh\theta=\theta\left(1+\frac{\theta^2}{\pi^2}\right)\left(1+\frac{\theta^2}{2^2.\pi^2}\right)\left(1+\frac{\theta^2}{3^2.\pi^2}\right)\ldots.$

Put $\theta=\pi n$, $\frac{1}{3}\pi n$ successively

$$\sinh\pi n=\pi n\left(1+\frac{n^2}{1^2}\right)\left(1+\frac{n^2}{2^2}\right)\left(1+\frac{n^2}{3^2}\right)\ldots,$$

$$\sinh\tfrac{1}{3}\pi n=\tfrac{1}{3}\pi n\left(1+\frac{n^2}{3^2.1^2}\right)\left(1+\frac{n^2}{3^2.2^2}\right)\left(1+\frac{n^2}{3^2.3^2}\right)\ldots;$$

therefore $\dfrac{\sinh\pi n}{\sinh\frac{1}{3}\pi n}=3\left(1+\frac{n^2}{1^2}\right)\left(1+\frac{n^2}{2^2}\right)\left(1+\frac{n^2}{4^2}\right)\ldots;$

therefore $\tfrac{1}{3}(2\cosh\tfrac{2}{3}\pi n+1)=\left(1+\frac{n^2}{1^2}\right)\left(1+\frac{n^2}{2^2}\right)\left(1+\frac{n^2}{4^2}\right)\ldots,$

since $$\frac{\sinh\pi n}{\sinh\frac{1}{3}\pi n}=3+4\sinh^2\tfrac{1}{3}\pi n.$$

Mr. A. M. Nesbitt, M.A., gives the following brief and very neat Solution;—

We have $\left(1-\frac{m^2}{1^2}\right)\left(1-\frac{m^2}{2^2}\right)\left(1-\frac{m^2}{3^2}\right)\ldots$ ad inf. $=\sin m\pi/m\pi$.

Put $3m=n$: then the given expression when multiplied by $\sin\frac{1}{3}n\pi/\frac{1}{3}n\pi$ becomes $\sin n\pi/n\pi$. Thus the expression is equal to $\frac{1}{3}\sin n\pi/\sin\frac{1}{3}n\pi$, *i.e.*, $\frac{1}{3}(2\cos\frac{2}{3}n\pi+1)$.

Similarly the expression with lower signs is equal to $\frac{1}{3}\sinh n\pi/\sinh\frac{1}{3}n\pi$, *i.e.*, to $\frac{1}{3}(3+4\sinh^2\frac{1}{3}n\pi)$, which is $\frac{1}{3}(2\cosh\frac{2}{3}n\pi+1)$.

16112. (H. Bateman, B.A.)—Prove that (with the usual notation for the Legendre polynomial), if x, y, z lie between ±1,

$$\sum_0^\infty(2n+1)P_n(x)P_n(y)P_n(z)=\frac{2}{\pi\sqrt{(1-z^2-y^2-z^2+2xyz)}}\quad\text{or }0,$$

according as the quantity under the square root is positive or negative.

Solution by the Hon. G. R. Dick, M.A.

Denote for brevity the expression $1-x^2-y^2-z^2+2xyz$ by Δ, and let Ω be a function of z which $=1/\sqrt{\Delta}$ when Δ is positive, and $=0$ when Δ is negative. Suppose Ω exhibited as a series of sphere functions in z of the first kind, so that

$$\Omega=\sum_0^\infty a_nP_n(z)\ \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots(1);$$

whence $$\frac{2}{2n+1}a_n=\int_{-1}^1\Omega P_n(z)\,dz.$$

Now $\Omega=0$, except when z lies between $xy-\sqrt{[(1-x^2)(1-y^2)]}$ and $xy+\sqrt{[(1-x^2)(1-y^2)]}$. Call these expressions z_0 and z_1; thus

$$a_n=\frac{2n+1}{2}\int_{z_0}^{z_1}\frac{P_n(z)\,dz}{\sqrt{\Delta}}.$$

Now put $z=xy-\sqrt{[(1-x^2)(1-y^2)]}\cos\phi$;

so that $dz=\sqrt{[(1-x^2)(1-y)]}\sin\phi\,d\phi$;

also $\Delta=(1-x^2)(1-y^2)\sin^2\phi$;

therefore

$$\int_{z_0}^{z_1}\frac{P_n(z)\,dz}{\sqrt{\Delta}}=\int_0^\pi P_n\left\{xy-\sqrt{[(1-x^2)(1-y^2)]}\cos\phi\right\}d\phi=\pi P_n(x)P_n(y),$$

a well known result. See Heine, *Handbuch der Kugelfunctionen*, Vol. I., p. 313.

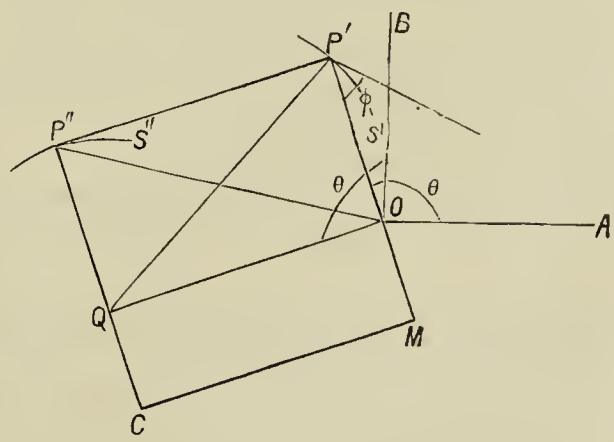
When $x=1$, $y=1$ each side of (1) is zero, except when $z=1$, in which case each side is infinite.

Note by the Proposer.

Conditions that a function of a real variable x can be expanded in a convergent series of Legendre polynomials with the above law for determining the coefficients are given by Darboux, "Approximation des Fonctions de grands Nombres," *Liouville's Journal* (3e série), t. IV., p. 393, 1878. The conditions are the same as those for a Fourier expansion, except that, if the function $f(x)$ becomes infinite at $x=\pm1$, $(x\mp1)^{\frac{3}{2}}f(x)$ must tend to zero as x approaches the singularity. The function given above clearly satisfies these conditions, and so the expansion is valid.

16065. (V. Ramaswami Aiyar.)—Let S denote the parabolic spiral $r=a\theta^2$. Let S′ denote the connected curve $r=a(\theta^2-1)$. Let S″ denote the negative pedal of S′. Prove (1) that any arc of the curve S″ is equal in length to the corresponding arc of its pedal S′; (2) that the radius of curvature at any point of S″ is equal to the distance of that point from the origin; (3) that the locus of the point of intersection of normals at corresponding points of S′ and S″ is a spiral of Archimedes; (4) that the evolute of S″ is an involute of a circle; and (5) that any arc of the curve S is equal in length to the corresponding arc of its second negative pedal.

Solutions (I.) *by* M. T. Naraniengar, M.A., *and* K. S. Patrachan; (II.) *by* M. V. Arunachalan, M.A.



(I.) Let P′ be a point on S′ and P″ the corresponding point on S″, and let r', r'' denote OP′ and OP″; then

$r'=a(\theta^2-1)$;

therefore

$\cot\phi=2\theta/(\theta^2-1)$

and

$\sin\phi=\dfrac{(\theta^2-1)}{(\theta^2+1)}$.

Hence

$r''=r'/\sin\phi$

$=r'(\theta^2+1)/(\theta^2-1)$

$=r'+2a$,

ϕ being the angle between OP′ and the tangent at P′.

(1) Now, if s', s'' denote arcs of S′ and S″, $\cos\phi=dr'/ds'=dr''/ds''$. But $dr'=dr''$. Therefore $ds'=ds''$. Hence, by integration, any arc of S′ = corresponding arc of S″.

(2) $r''=r'+2a=p''+2a$, if p'' denote the perpendicular on the tangent at P″; therefore

$$\rho\text{ of S}''=r''(dr''/dp'')=r''.$$

(3) The normal at P′ evidently bisects r''; so that, if Q be the intersection of the normals at P′ and P″, $OQ=r'\cot\phi=2a\theta$, *i.e.*, the locus of Q is a spiral of Archimedes with OB for initial line.

(4) If C be the centre of curvature at P″, complete the rectangle P′P″CM. Then $OM=2a=$ constant; whence CM touches a circle; *i.e.*, the evolute of S″ is the involute of a circle.

(5) In the curve S or $r = a\theta^2$, $\cot\phi = 2/\theta$; therefore, if r_2 denote the radius vector of the second negative pedal S_2.

$$r_2 = r/\sin^2\phi = r(1+\cot^2\phi) = r(1+4/\theta^2) = r+4a:$$

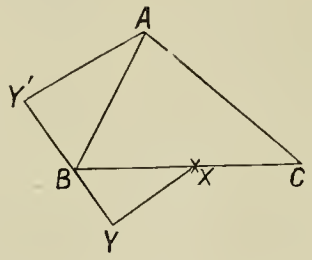
so that $dr_2 = dr$. Hence $\cos\phi = dr/ds = dr_2/ds_2$; therefore $ds = ds_2$ and arc of S = the corresponding arc of S_2. [Rest in *Reprint*.]

15909. (H. L. Trachtenberg, B.A.)—ABC is a triangle; X is the point of contact with the side BC of the escribed circle corresponding to A. Show that an ellipse can be described with A, X as foci passing through B and C, and show that the lengths of the semi-major axis, semi-minor axis, and semi-latus rectum are respectively

$$\tfrac{1}{2}s,\quad \sqrt{[s(s-b)(s-c)/a]},\quad 2(s-b)(s-c)/a;$$

also eccentricity = AX/s.

Solutions (I.) *by* A. M. Nesbitt, M.A., *and* W. Austin Sleigh, B.A.; (II.) *by* Saradakanta Ganguli, M.A., F. W. Reeves, M.A., *and* R. J. Whitaker.



(I.) Since AB + BX = AC + CX = s, the first part of the theorem is obvious, as also that s = major axis, and that eccentricity = AX/s. Let YBY′ bisect the exterior angle at B; then

$$XY = XB\sin XBY = (s-c)\cos\tfrac{1}{2}B,$$

and $$AY' = c\cos\tfrac{1}{2}B,$$

i.e., the square of the semi-minor axis is

$$\{[c(s-c)][s(s-b)]\}/ac,$$

which agrees with the result propounded. Hence the semi-latus rectum, which is obtained by dividing this expression by $\frac{1}{2}s$, likewise takes the form stated.

(II.) Let the escribed circle touch AB and AC at Y and Z respectively. Then AB + BX = AY = AZ = AC + CX; therefore an ellipse with foci at A and X can be described through B and C. The semi-major axis = $\frac{1}{2}$(AB + XB) = $\frac{1}{2}$AY = $\frac{1}{2}s$,

$$(\text{minor-axis})^2 = (\text{major-axis})^2 - AX^2 = s^2 - [c^2 + (s-c)^2 - 2c(s-c)\cos B]$$
$$= 4s(s-b)(s-c)/a;$$

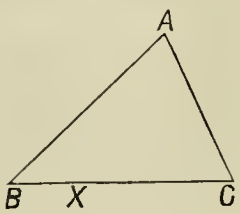
therefore semi-minor axis $= \sqrt{\{s(s-b)(s-c)/a\}}$,

semi-latus rectum = (semi-minor axis)^2/semi-major axis
$= 2(s-b)(s-c)/a$,

and eccentricity = AX/s. This proposition suggests that, if the in-circle touch BC at D, a hyperbola with foci at A and D can be described so as to pass through B and C.

Note.—The Proposer had intended the theorem on the hyperbola to be the subject of a separate question; it had been considered by him, and had furnished a series of results analogous to those of the given theorem.

The Proposer and Mr. C. M. Ross demonstrate the theorem as follows:—



Since BX and CX are respectively = $s-c$ and $s-b$, therefore BA + BX = s and CA + CX = s. Hence the ellipse with A, X for foci and $\frac{1}{2}s$ for semi-major axis passes through B and C. If l be its semi-latus rectum, since BXC is a focal chord, $2/l = 1/BX + 1/CX = 1/(s-c) + 1/(s-b)$
$= a/[(s-b)(s-c)]$;

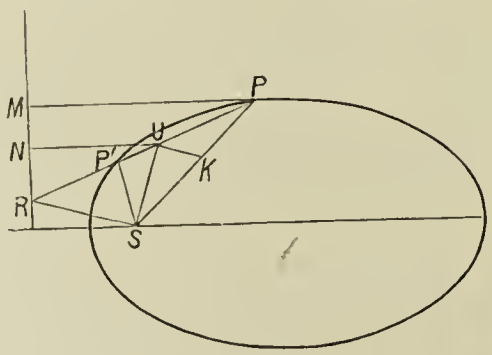
therefore $l = [2(s-b)(s-c)]/a$;

the semi-minor axis $= \sqrt{(l \,.\, \text{semi-major axis})} = \sqrt{\{[s(s-b)(s-c)]/a\}}$.

the eccentricity = distance between foci / major axis = AX/s.

16070. ("Cymro.")—Prove geometrically that a chord of an ellipse which subtends a constant angle at the focus always touches an ellipse with the same focus and directrix.

Solution by W. F. Beard, M.A.



Let PP′ be a chord of an ellipse subtending a constant angle at the focus S, and let it meet the directrix at R. Bisect ∠PSP′ by SU, which is therefore perpendicular to SR. Draw PM, UN perpendicular to the directrix and UK perpendicular to SU. UK is parallel to SR; therefore

SK/SP = PU/RP = UN/PM;

therefore

SK/UN = SP/PM;

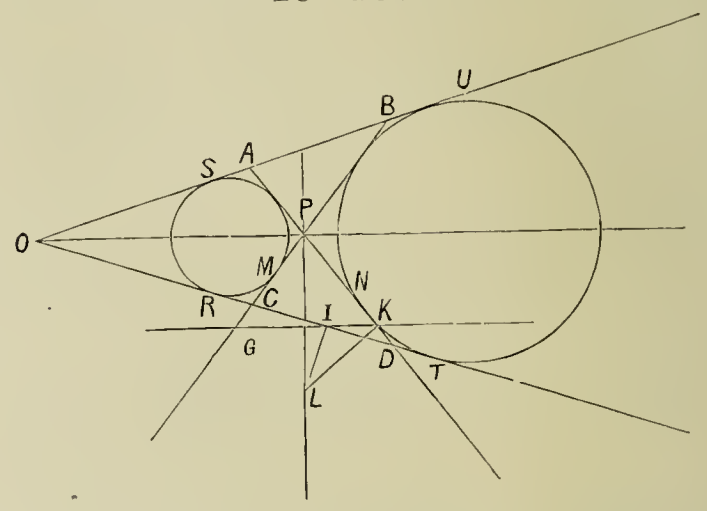
therefore SK/UN is a constant ratio. Also SU/SK is a constant ratio, since ∠USK is constant; therefore SU/UN is a constant ratio, and the locus of U is an ellipse focus S and directrix MR. Also, since ∠USR is a right angle, UR is a tangent to this ellipse. Thus the envelope of PP′ is an ellipse focus S and directrix MR.

16127. (C. E. Youngman, M.A.)—Construct the two circles of which there are given the two centres of similitude, the length of one common tangent, and the direction of another.

Solution by Henry Riddell, M.E.

Let O and P be the two centres of similitude, and let the direction of AD and hence of BC be given. Then RT the common tangent

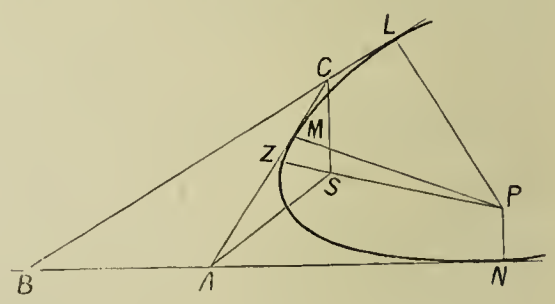
= BC = PC + PD.



The problem therefore reduces to the following:—Through O, a point on the external bisector of the vertical angle, draw a transversal OD, cutting off PC + PD = a given length. Draw PL, the internal bisector, and cut off PK = $\frac{1}{2}$RT. Draw KL perpendicular to PK. Then is L a point on the circum-circle of the required triangle. Describe on OL as diameter a circle; then the middle point of CD lies on this circle, since PL is the bisector of the angle at P. But the middle point also lies on KG, parallel to OP, and is therefore the intersection of these two loci I. Draw OI and OA, and the circles may be described at once. If the cross tangent be chosen as the given length, a similar problem is obtained, but varied by the given point being placed on the internal bisector and the difference of sides being known.

16103. (R. F. Scott, M.A.)—Normals PL, PM, PN are drawn to a parabola, focus S. Prove that the diameter of the circle circumscribing the triangle formed by the tangents to the parabola at the points L, M, N is equal to SP.

Solution by M. T. Naraniengar, M.A.



Let ABC be the triangle formed; then the circle ABC passes through S and its diameter

d = (SA . SC)/SZ

where SZ = perpendicular on AC. Now, if SL, SM, SN be denoted by r_1, r_2, r_3, $SA^2 = r_2r_3$ and $SC^2 = r_1r_2$ and $SZ^2 = r_2a$ (where $4a$ = latus rectum). Hence $d = \sqrt{(r_1r_2r_3/a)}$. But, in the case of concurrent normals $r_1 . r_2 . r_3 = a\,SP^2$. Therefore d = SP.

16074. (Professor Lauvernay.)—Inscrire dans un cercle de rayon R un triangle de surface maximum, sachant que ses médianes se rencontrent en un point G distant du centre O d'une longueur GO = α.

Solution by W. F. Beard, M.A.

Let the sides of the triangle be a, b, c; Δ its area. $abc = 4R\Delta$; therefore abc must be a maximum. Also $OG^2 = R^2 - \frac{1}{9}\Sigma a^2$ and OG = α; therefore $\Sigma a^2 = 9(R^2 - \alpha^2)$ = const. Hence $a^2b^2c^2$ or abc is a maximum when $a = b = c$. Thus $a^2 = 3(R^2 - \alpha^2)$ ....

15981. (Professor Neuberg.)—Etant donné un paraboloïde

$$z = ax^2 + by^2,$$

on mène un plan tangent quelconque α, et par la trace de α sur le plan xOy on mène un plan β perpendiculaire à α. Trouver l'enveloppe du plan β.

Solution by J. HODGKINSON.

The tangent plane at any point (x_1, y_1, z_1) of the paraboloid $z = ax^2 + by^2$ is $z + z_1 = 2axx_1 + 2byy_1$. The plane through the trace on xOy is

$$2axx_1 + 2byy_1 = kz + z_1.$$

These planes are perpendicular if $k + 4a^2x_1^2 + 4b^2y_1^2 = 0$; *i.e.*, the plane is

$$2axx_1 + 2byy_1 + z(4a^2x_1^2 + 4b^2y_1^2) - (ax_1^2 + by_1^2) = 0,$$

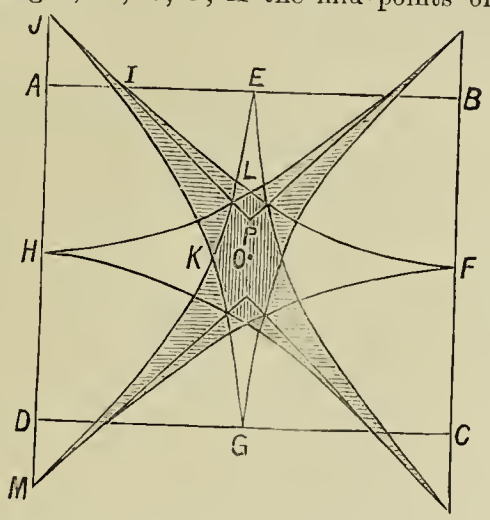
the envelope of which we find in the usual way to be the cubic surface

$$ax^2 + by^2 = 4abz(x^2 + y^2).$$

16084. (D. BIDDLE.)—Define the area within which lies the centre of a circle that cuts all four sides of a given rectangle (*a*) twice, (*b*) at least once.

Solution by JAMES BLAIKIE, M.A.

Let ABCD be the given rectangle; E, F, G, H the mid-points of its sides. Let eight parabolas be described, each of which has one of the vertices of the rectangle as focus and one of the opposite sides as directrix. It is clear, from the properties of the parabola, that, if X be a point within the area AEKH, then XA, the largest radius which would give a circle meeting AD in two points, would be less than the perpendicular from X on BC. Thus the required area (*a*) is the vertically shaded part left when AEKH and seven similar parts of parabolic areas have been removed from the rectangle.



To find the area (*b*), we observe that the common tangents drawn to the parabolas JKG, ILF meet them in I and J, where the parabolas cut AB and AD produced. In addition to the area already found, the areas IPL, JPK clearly satisfy the condition (*b*). Thus the horizontally shaded area, as well as the vertically shaded, satisfies (*b*).

16117. (Lt.-Col. ALLAN CUNNINGHAM, R.E.)—Show that

$$n^{2n} \equiv 1 \pmod{p}$$

where $p = x^4 + y^4 = 256n + 1$ (a prime) and $y = 4\eta$.

Solution by the PROPOSER.

It has been shown in the Proposer's paper "On 2 as a 16-ic Residue" in *Proc. Lond. Math. Soc.*, Vol. XXVII., Art. 16, that $2^{(p-1)/16} \equiv +1$ when $p = x^4 + y^4$ (a prime), if $y = 4\eta$. Here $2^8 n \equiv -1 \pmod{p}$; therefore

$$(2^8)^{(p-1)/128} n^{(p-1)/128} \equiv (-1)^{(p-1)/128} \pmod{p},$$

whence $\quad 2^{(p-1)/16} n^{2n} \equiv +1 \quad$ and $\quad n^{2n} \equiv +1 \pmod{p}$.

16076. (A. M. NESBITT, M.A.)—Factorize the determinant whose first row is $\quad a_2 + a_3 - 2a_1, \quad a_2^2 + a_3^2 + a_2a_3, \quad a_1(a_1^2 + 2a_2a_3)$.

Solution by M. V. ARUNACHALAN, M.A.

Let
$$D \equiv \begin{vmatrix} a_2 + a_3 - 2a_1, & a_2^2 + a_3^2 + a_2a_3, & a_1^3 + 2a_1a_2a_3 \\ a_3 + a_1 - 2a_2, & a_3^2 + a_1^2 + a_3a_1, & a_2^3 + 2a_1a_2a_3 \\ a_1 + a_2 - 2a_3, & a_1^2 + a_2^2 + a_1a_2, & a_3^3 + 2a_1a_2a_3 \end{vmatrix}.$$

Subtracting the last row from each of the first two rows,

$$D = (a_3 - a_1)(a_3 - a_2) \begin{vmatrix} 3, & a_1 + a_2 + a_3, & -(a_1^2 + a_3^2 + a_1a_3) \\ 3, & a_1 + a_2 + a_3, & -(a_2^2 + a_3^2 + a_2a_3) \\ a_1 + a_2 - 2a_3, & a_1^2 + a_2^2 + a_1a_2, & a_3^3 + 2a_1a_2a_3 \end{vmatrix}.$$

Subtract the second row from the first. Then

$$D = (a_1 - a_2)(a_2 - a_3)(a_3 - a_1)(a_1 + a_2 + a_3)$$
$$\times \begin{vmatrix} 0, & 0, & 1 \\ 3, & \Sigma a_1, & -(a_2^2 + a_3^2 + a_2a_3) \\ a_1 + a_2 - 2a_3), & a_1^2 + a_2^2 + a_1a_2, & a_3^3 + 2a_1a_2a_3 \end{vmatrix}.$$

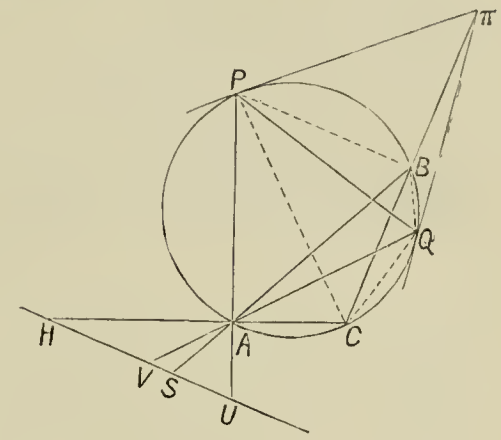
$$= (a_1 - a_2)(a_2 - a_3)(a_3 - a_1)(a_1 + a_2 + a_3) \begin{vmatrix} 3, & a_1 + a_2 + a_3 \\ a_1 + a_2 - 2a_3, & a_1^2 + a_2^2 + a_1a_2 \end{vmatrix}$$

$$= (a_1 - a_2)(a_2 - a_3)(a_3 - a_1)(a_1 + a_2 + a_3)(2\Sigma a_1^2 + \Sigma a_2a_3).$$

16055. (Professor SANJÂNA, M.A.)—S and H are two given points, P and Q two other given points, all in one plane. Draw through P and Q two straight lines mutually perpendicular to cut SH in U and V, so that (SUHV) may be harmonic.

Extension by the PROPOSER.

Taking the more general case when the two lines through P and Q contain a given angle, we may proceed thus. On PQ describe a circle, so that the segment PAQ contains the given angle, and find π, the pole of PQ. Inscribe the triangle ABC so that AB, AC go through S, H, and BC goes through π. Then, producing PA, QA, we get the range (SUHV) harmonic. For PBQC is a harmonic quadrilateral; hence A (PBQC) is a harmonic pencil, *i.e.* (USVH) or (SUHV) is a harmonic range. In Mr. Riddell's Solution to the Question as set, BC, being perpendicular to PQ (the diameter), is parallel to the tangents at P and Q, *i.e.*, goes through the pole of PQ which is at infinity. It is evident that there are two solutions when the angle PAQ is not right.



16049. (Professor NANSON.)—Find the condition that the three pairs of meets of three conics S_1, S_2, S_3 with three lines L_1, L_2, L_3 respectively may lie on a conic.

Solution by W. F. BEARD, M.A.

Let $S_1 \equiv F_1(x, y), \ldots$. Let L_1, L_2, L_3 meet at A, B, C, and let the co-ordinates of A, B, C be $x_1y_1, \ldots$. Let L_1 meet S_1 at D_1E_1; .... By Carnot's theorem, if D_1E_1, D_2E_2, D_3E_3 lie on a conic, then

$$[(BD_1 . BE_1)/(CD_1 . CE_1)][(CD_2 . CE_2)/(AD_2 . AE_2)]$$
$$\times [(AD_3 . AE_3)/(CD_3 . CE_3)] = 1.$$

But $\quad [(BD_1 . BE_1)/(CD_1 . CE_1)] = [F_1(x_2y_2)]/[F_1(x_3y_3)], \ldots$.

Thus the required condition is

$$F_1(x_2y_2)\, F_2(x_3y_3)\, F_3(x_1y_1) = F_1(x_3y_3)\, F_2(x_1y_1)\, F_3(x_2y_2).$$

16116. (H. L. TRACHTENBERG, B.A.)—If the capitals are the minors of the corresponding small letters in $\begin{vmatrix} a & h & g \\ h & b & f \\ g & f & c \end{vmatrix}$, prove that, if

$$F/f = G/g = H/h,$$

then
$$(A/f + H/g + G/h)/(1/f) = (H/f + B/g + F/h)/(1/g)$$
$$= (G/f + F/g + C/h)/(1/h).$$

Solution by C. M. ROSS.

$$A = bc - f^2, \quad B = ca - g^2, \quad C = ab - h^2,$$
$$F = gh - af, \quad G = hf - bg, \quad H = fg - ch.$$

Let
$$F/f = G/g = H/h = \lambda;$$

i.e.,
$$(gh - af)/f = (hf - bg)/g = (fg - ch)/h = \lambda.$$

Then
$$(A/f + H/g + G/h)/(1/f) = bc - f^2 + f(fg - ch)/g + f(hf - bg)/h$$
$$= [gh(bc - f^2) + hf(fg - ch) + fg(hf - bg)]/gh$$
$$= (bcgh - cfh^2 + f^2gh - bg^2f)/gh$$
$$= (fg - ch)(hf - bg)/gh = \lambda^2.$$

Similarly, each of other fractions $= \lambda^2$. Therefore, &c.

QUESTIONS FOR SOLUTION.

16147. (Professor R. W. GENESE, M.A.)—A given mass is distributed over three given points A, B, C. Prove that the moment of inertia of any distribution about its centroid varies as the power of that point with respect to the circle ABC.

16148. (D. BIDDLE.)—A gun, the elevation of which (by a swivel) is adjustable in the same vertical plane, and to which ball cartridges of different propulsive power can be fitted, is taken to the summit of a cliff overlooking the sea. Three shots are fired, the second being horizontal and separated from the first and third by intervals in seconds p, q, those shots being at equal angles above and below the horizon. Disregarding the resistance of the air, find initial velocities in feet l, m, n which will allow of the three bullets clashing together at some one point in the vertical plane.

16149. (ROBT. W. D. CHRISTIE.)—When 12345679 is multiplied by 9, we get a succession of units. Explain the reason and give the general theorem. Put also in Hensel's notation, using prime 7.

16150. (Lt.-Col. ALLAN CUNNINGHAM, R.E.)—Given

$$N = 549, 350, 809, 785, 675, 865, 253, 538, 956, 347, 403$$

to find N, x (both integers).

16151. (T. STUART, M.A., D.Sc.)—Factorize completely (by a perfectly general process) the number

$$N_1 = \tfrac{1}{5}[1819^3 - 4(936)^3] = 547706567, \quad N_2 = 4(52470)^3 + (11663)^3.$$

Generalize your solution.

16152. (M. V. ARUNACHALAN, M.A.)—Show that

$$[a(b-c)(bc-aa')(a^4-a'^4)]/(a-a') + [b(c-a)(ca-bb')(b^4-b'^4)]/(b-b') + [c(a-b)(ab-cc')(c^4-c'^4)]/(c-c')$$
$$= (b-c)(c-a)(a-b)(bc-aa')(ca-bb')(ab-cc')\,S/abc$$

where $aa' = bb' = cc'$ and $S = a+b+c+a'+b'+c'$.

16153. (W. J. GREENSTREET, M.A.)—If χ be the angle made with the initial line by the join of the centre of curvature to the origin, find $d\chi/d\psi$ in terms of p, ρ, ψ, the letters having the usual significance.

16154. (C. E. YOUNGMAN, M.A.)—In a three-cusped hypocycloid A, B, C are the cusps, Q and Q′ points on the curve, ϕ the angle between the tangents at Q and Q′, and α the angle between the asymptotes of the hyperbola ABCQQ′. Prove that $\cos\phi = \pm 2\cos\alpha$.

16155. (Professor NANSON. Suggested by Question 16014.)—Find the locus of the foci of a conic of given eccentricity described about a given triangle.

16156. (R. F. DAVIS, M.A.)—Prove that the equation to a parabola touching the oblique axes Ox, Oy, whose focus is at the point (ξ, η), is $\sqrt{(x\xi)} + \sqrt{(y\eta)} = \sqrt{(\xi^2 + 2\xi\eta\cos\omega + \eta^2)}$ where $\omega = \angle x\mathrm{O}y$.

16157. (W. F. BEARD, M.A. Suggested by Question 15945.)—T is the pole of a chord PQ of a parabola whose focus is S; TS, PS, QS meet the circum-circle of the triangle TPQ in T′, P′, Q′. Prove that the triangles TPQ, T′P′Q′ are congruent.

16158. (V. RAMASWAMI AIYAR, M.A.)—ABC is a triangle inscribed in a conic, focus S. If the base BC passes through the reflection of the vertex A with respect to the S-directrix, then the pedal circle of the triangle ABC with respect to S has its diameter equal to SA.

16159. (Professor SANJÁNA, M.A.)—On the sides CA and CB of a triangle ABC H and K are respectively taken so that CH . CK is constant; in CA, CP is a third proportional to CH and CA, and in CB, CQ is a third proportional to CK and CB. Find the loci of the intersections of PQ and HK, of PB and AQ, and of HB and AK. If PB and AQ meet in O, CO meet QP in L, and CD be a mean proportional between CO and CL, find the locus of D.

16160. (I. ARNOLD.)—Three points A, B, C are in one right line, and a circle is drawn with A as centre. Find the locus of the intersection of the right line passing through B and one extremity of a diameter of the circle and the right line passing through C and the other extremity of the same diameter.

16161. (V. DANIEL, B.Sc.)—The perpendiculars of A′B′C′ are rotated in the same direction through an angle ϕ about the vertices, forming a triangle (modulus of similarity $1/\lambda \equiv 2\sin\phi$) capable of being revolved round some point O through an angle θ, so as to lie inscribed to Δ' (A on B′C′, ...). Show that

$$4\sin\theta = \sqrt{(4\lambda^2-1)} \pm \sqrt{(4\lambda^{-2}-1)}.$$

16162. (Professor NEUBERG.)—On donne une droite indéfinie d et deux points A′, B′. Construire un triangle ABC dont les sommets A, B se trouvent sur d et dont AA′, BB′ soient deux hauteurs.

16163. (Professor COCHEZ.)—On donne trois cercles co-axiaux. Lieu de P tel que les tangentes PA, PB et PC à ces cercles (A, B, C étant les points de contact) vérifient la relation $(\mathrm{PA}\,.\,\mathrm{PB})/\mathrm{PC}^2 = \mathrm{K}$.

16164. (A. THOMPSON.)—The tangents to the circum-circle of a spherical triangle ABC meet the opposite sides in P, Q, R. Small circles are described with centres at P, Q, R and radii PA, QB, RC. Show that these small circles are co-axal, the great circle of centres being the trilinear polar of the Lemoine point, and the radical axis being the join of the circum-centre and symmedian point.

OLD QUESTIONS AS YET UNSOLVED (IN OUR COLUMNS).

10604. (Professor ORCHARD, M.A.)—A quantity u depends upon n others, $x_1, x_2, x_3, \ldots, x_n$, which may be constant one at a time in such a manner that when x_1 is constant (and the $n-1$ others vary) $u \propto {}_2 + x_3 + \ldots + x_n$; when x_2 is constant, $u \propto x_1^2 + x_3^2 + \ldots + x_n^2$; when x_3 is constant, $u \propto x_1^3 + x_2^3 + \ldots + x_n^3$; when x_4 is constant,

$$u \propto x_1^4 + x_2^4 + \ldots + x_n^4,$$

and so on. Find how u varies when all the n quantities are variable.

10708. (H. MACCOLL, B.A.)—Three random points P, Q, R are taken in the perimeter of a square. Find the respective chances of the straight lines PQ, QR, RP forming an acute-angled triangle, an obtuse-angled triangle, or no triangle.

10761. (Professor CATALAN.)—Si a, b, c désignent les côtés d'un triangle rectiligne, démontrer que $a^2b(a-b) + b^2c(b-c) + c^2a(c-a) \equiv 0$.

10787. (R. H. W. WHAPHAM, M.A.)—If n, r be positive integers, show that

$$r^{n(n-1)} > \left\{(n+1)^{n+1}\binom{n}{1}^n\binom{n-1}{2}^{n-1}\binom{n-2}{3}^{n-2}\cdots\binom{2}{n-1}^2\binom{1}{n}^1\right\}^{(2^{r-1}-1)/2^{r-2}}.$$

10820. (G. H. BRYAN, M.A.)—Find a law of error such that, if the probable errors in two observations are equal, the probable error in their sum is equal to that in either of the observations.

10943. (A. E. JOLLIFFE.)—By means of the fact that only one rectangular hyperbola can be drawn through four points—neither of which is the orthocentre of the other three—deduce a simple proof of Feuerbach's theorem, viz., the nine-point circle touches the in- and escribed circles.

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Thursday, January 10th, 1907.—Prof. W. Burnside, President, in the Chair.

Mr. W. P. Milne and Mr. G. S. Le Beau were elected members.

Mrs. A. Stott was admitted into the Society.

Mrs. Stott exhibited a collection of models of three-dimensional sections of the four-dimensional regular hypersolids.

The following papers were communicated:—

"The Uniform Convergence of Fourier's Series," by Dr. E. W. Hobson.

"On Hyper-even Numbers and on Fermat's Numbers," by Lieut.-Col. A. Cunningham.

"On Riemann's Hypergeometric Function," by Rev. Dr. E. W. Barnes.

"On Partial Differential Coefficients of the Second Order, having Integral Systems free from Partial Quadratures," by Prof. A. R. Forsyth.

"The Singular Points of certain Classes of Functions of several Variables," by Mr. G. H. Hardy.

"The Singularities of Functions defined by Taylor's Series," by Mr. G. H. Hardy.

"Asymptotic Approximation to Integral Functions of Zero Order," by Mr. J. E. Littlewood.

"On the Reducibility of Covariants of Binary Quantics of Infinite Order, Part III.," by Mr. P. W. Wood.

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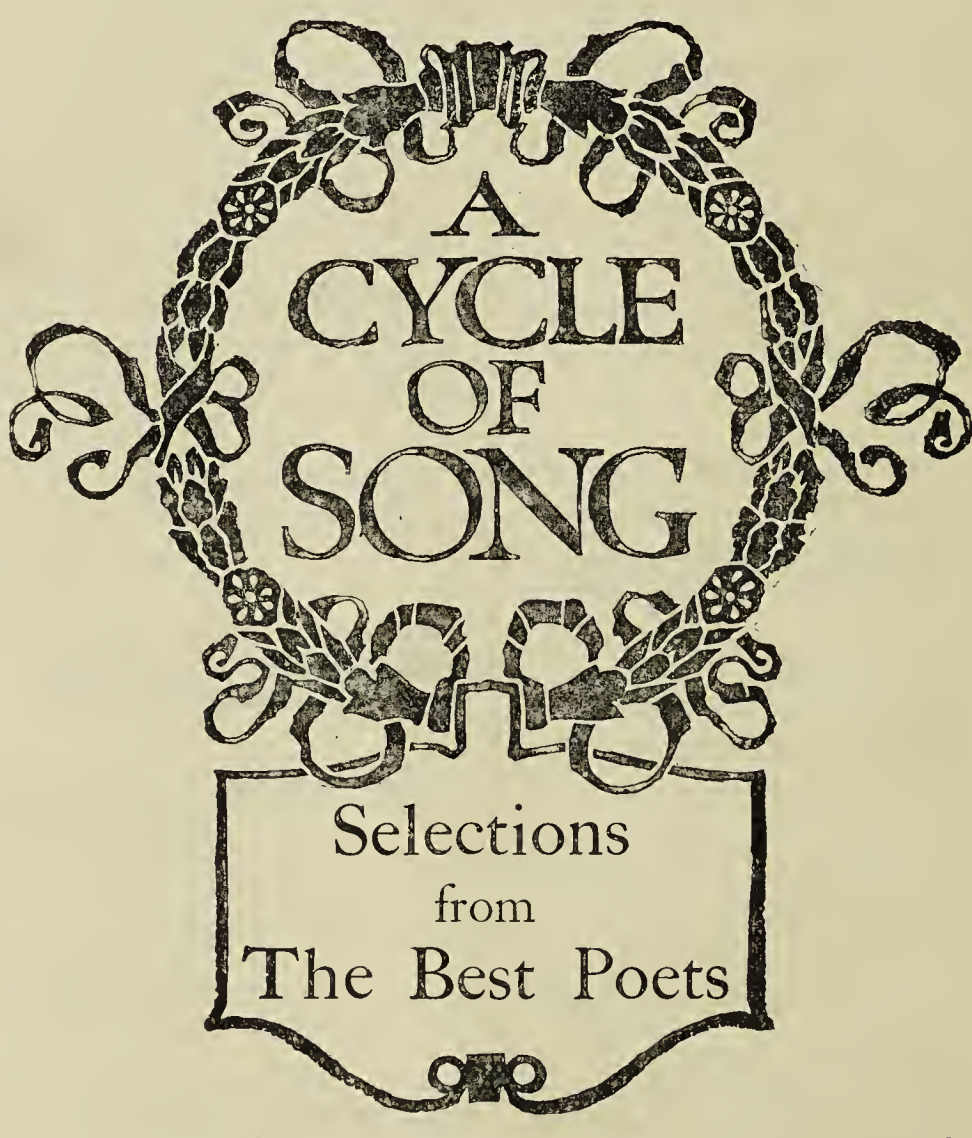

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CLASS LISTS

OF CANDIDATES WHO HAVE PASSED THE CERTIFICATE EXAMINATION OF THE COLLEGE OF PRECEPTORS.—CHRISTMAS, 1906.

The list of successful candidates at the Colonial Centres will be published in the March number of "The Educational Times."

[*Throughout the following Lists, bracketing of names implies equality.*]

PRIZES.

General Proficiency.

FIRST CLASS [or SENIOR].

1. Jones, T. A. (*Isbister Prize.*) — Mr. Bayley, Wellington College, Salop.
2. Brenton, W. P. (*Pinches Prize.*) — Rev. Dr. Scott, Mercers' School, Holborn, E.C.
3. Dodson, F. K. — Rev. T. J. Cunningham, Hutton Grammar School.
4. Grace, M. B. — Mr. Bayley, Wellington College, Salop.

SECOND CLASS [or JUNIOR].

1. Bennell, Miss M. — Miss Cowdroy, Crouch End High School, Hornsey.
2. Ware, Miss V. W. — Miss Hitchcock, Portsmouth Girls' Secondary School.
3. Allinson, B. P. — Mr. Bayley, Wellington College, Salop.
4. Henstock, A. F. N. — Mr. Butcher, Queen Elizabeth's Grammar School, Ashburne.

THIRD CLASS.

1. Curtis, S. J. — Rev. E. Priestley, Kendrick Boys' School, Reading.
2. Fawcett, S. H. — Mr. Douglas, Westmorland Road School, Newcastle-on-Tyne.
3. Harrison, R. — Mr. Armstrong, Scarborough College.
4. Brown, E. R. — Mr. Brown, Penketh School.
   Watt, Miss E. I. — Miss Cowdroy, Crouch End High School, Hornsey.

English Subjects.

1. King, H. — Rev. E. Priestley, Kendrick Boys' School, Reading.
2. [Not awarded.]

Mathematics.

1. Schroter, O. E. — Mr. Oakes, Oakes Institute, Walton, Liverpool.
2. Frazer, R. F. — Mr. Oakes, Oakes Institute, Walton, Liverpool.

Modern Foreign Languages.

1. de Morsier, T. E. — Mr. Spargo, Jersey Modern School, St. Helier.
2. Allinson, A. P. — Mr. Bayley, Wellington College, Salop.

Classics.

[Not awarded.]

Natural Sciences.

1. Grace, M. B. — Mr. Bayley, Wellington College, Salop.
2. Jones, T. A. — Mr. Bayley, Wellington College, Salop.

Taylor Jones Prize for Scripture History.

Payne, Miss D. L. — Mrs. Hiatt, Ladies' College, Wellington, Salop.

*Pitman Medals for Shorthand.

1. Jeune, O. E. (*Pitman Silver Medal.*) — Mr. Spargo, Jersey Modern School, St. Helier.
2. Hotson, W. A. (*Pitman Bronze Medal.*) — Rev. Dr. Scott, Mercers' School, Holborn, E.C.

* F. Jackson was disqualified for the Pitman Bronze Medal, in consequence of having obtained it at a previous Examination.

The following is a List of the Candidates who obtained the FIRST and SECOND PLACES in each Subject on FIRST CLASS PAPERS. (Only those who obtained Distinction are included.)

Scripture History.

1. Webb, Miss D. M. — Mr. & Mrs. Webb, Oakover Girls' School, Burnham.
2. Burgess, Miss A.E. — Miss Richards, Cambridge House High School, Battersea Park.
   Isherwood, Miss E.B. — Miss Harper, Norma School, Waterloo, Liverpool.
   Payne, Miss D. L. — Mrs. Hiatt, Ladies' College, Wellington, Salop.

English Language.

1. Raven-Hart, R. — Mr. Drennan, Drax Grammar School.
2. Smith, S. P. — Private tuition.
   Stanger, Miss H. B. — Mrs. Saunders, Arundel House School, Scarborough.
   Tobitt, G. R. — Mr. Everest, Valentia House School, South Norwood.
   Webb, H. P. — Mr. Bayley, Wellington College, Salop.

English History.

1. Gillson, T. — Private tuition.

Arithmetic.

1. Grace, M. B. — Mr. Bayley, Wellington College, Salop.
   Raven-Hart, R. — Mr. Drennan, Drax Grammar School.

Algebra.

2. Brenton, W. P. — Rev. Dr. Scott, Mercers' School, Holborn, E.C.
   Graham, G. S. — Mr. Oakes, Oakes Institute, Walton, Liverpool.

Geometry.

1. Carter, S. R. — Mr. Bayley, Wellington College, Salop.
   Jones, T. A. — Mr. Bayley, Wellington College, Salop.
   Raven-Hart, R. — Mr. Drennan, Drax Grammar School.

Trigonometry.

1. Brenton, W. P. — Rev. Dr. Scott, Mercers' School, Holborn, E.C.
   Frazer, R. F. — Mr. Oakes, Oakes Institute, Walton, Liverpool.
   Schroter, O. E. — Mr. Oakes, Oakes Institute, Walton, Liverpool.

Book-keeping.

1. Easton-Cook, W. P. — Mr. Gregory-Taylor, Grammar School, Shoreham.
2. Le Marinel, T. G. — Messrs. Davey, Oxenford House, St. Lawrence, Jersey.
   Penhale, W. P. — Mr. Wightman, The Middle School, Holsworthy.

Mensuration.

1. Jeune, O. E. — Mr. Spargo, Jersey Modern School, St. Helier.
2. Wolley, J. M. — Mr. Bayley, Wellington College, Salop.

French.

1. de Morsier, T. E. — Mr. Spargo, Jersey Modern School, St. Helier.
2. Piquet, C. J. — Mr. Silk, Clair-Val, Faldouet, Gorey, Jersey.

German.

1. Allinson, A. P. — Mr. Bayley, Wellington College, Salop.
   Allinson, B. P. — Mr. Bayley, Wellington College, Salop.

Latin.

1. Gresham, H. T. — Mr. Horsey, St. Mary's College, Harlow.

Hebrew.

1. Goitein, H. — Mr. Banks, Maida Vale School, W.

Sound, Light, and Heat.

1. Harrison, P. D. — Mr. Bayley, Wellington College, Salop.
2. Grace, M. B. — Mr. Bayley, Wellington College, Salop.

Magnetism and Electricity.

1. Coope, G. M. — Rev. T. J. Cunningham, Hutton Grammar School.
2. Jones, T. A. — Mr. Bayley, Wellington College, Salop.
   Wolley, J. M. — Mr. Bayley, Wellington College, Salop.

Chemistry.

1. Shovelton, L. — Mr. Blay, Hillary Street School, Walsall.
2. Grace, M. B. — Mr. Bayley, Wellington College, Salop.
   Smith, H. E. — Mr. Bayley, Wellington College, Salop.

Natural History.

1. Arnold, H. J. — Mr. Kenner, High School, Brentwood.
   Livermore, W. B. — Messrs. Butler & Brown, Tollington Schools, N.
   Wells, J. — Mr. Broxup, Margate Commercial School.

Drawing.

1. Allinson, A. P. — Mr. Bayley, Wellington College, Salop.
2. Jones, T. A. — Mr. Bayley, Wellington College, Salop.

Music.

1. Corbett, C. M. E. — Mrs. Hiatt, Ladies' College, Wellington, Salop.

Shorthand.

1. Mackie, Miss L. — Miss Luson, Clark's College Girls' School, Brixton Hill.
2. Jeune, O. E. — Mr. Spargo, Jersey Modern School, St. Helier.

Domestic Economy.

1. Vickers, Miss K. — Mr. Douglas, Westmorland Road School, Newcastle-on-Tyne.
2. Friend, Miss C. M. — Miss James, Northfield, Stamford Hill.
   Greenaway, Miss A. — Miss Turpin, St. Agnes' School, Willesden.
   Kent, Miss M. — Miss Luson, Clark's College Girls' School, Brixton Hill.
   Mackie, Miss L. — Miss Luson, Clark's College Girls' School, Brixton Hill.

CLASS LIST — BOYS.

N.B.—The small italic letters denote that the Candidate to whose name they are attached was distinguished in the following subjects respectively :—

a. = Arithmetic.
al. = Algebra.
b. = Botany.
bk. = Bookkeeping.
ch. = Chemistry.
d. = Drawing.
do. = Domestic Economy.
e. = English.
f. = French.
g. = Geography.
ge. = German.
geo. = Geology.
gm. = Geometry.
gr. = Greek.
h. = History.
he. = Hebrew.
i. = Italian.
l. = Latin.
m. = Mechanics.
ma. = Magnetism & Electricity.
ms. = Mensuration.
mu. = Music.
nh. = Natural History.
p. = Political Economy.
ph. = Physiology.
phys. = Elementary Physics.
s. = Scripture.
sc. = Elementary Science.
sd. = Sound, Light, and Heat.
sh. = Shorthand.
sp. = Spanish.
tr. = Trigonometry.
z. = Zoology.

The small figures [1] and [2] prefixed to names in the Second and Third Class Lists denote that the Candidates were entered for the First and Second Classes respectively.

In the addresses, Acad. = Academy, C. or Coll. = College, Coll. S. = Collegiate School, Comm. = Commercial, Conv. = Convent, Elem. = Elementary, End. = Endowed, Found. = Foundation, H. = House. Hr. = Higher, Inst. = Institute, Int. = International, Inter. = Intermediate, Poly. = Polytechnic, Prep. = Preparatory, P.T. = Pupil Teachers, S. = School, Sec. = Secondary, Tech. = Technical, Univ. = University.

FIRST CLASS [or SENIOR].

Honours Division.

Jones, T.A. *e.gm.ms.sd.ma.ch.d.* Wellington Coll., Salop
Brenton, W.P. *al.gm.tr.ms.f.d.* Mercers' S., Holborn, E.C.
Dodson, F.K. *a.ma.ch.d.* Hutton Gram. S.
Grace, M.B. *a.gm.sd.ch.* Wellington Coll., Salop
Smith, H.E. *gm.ma.ch.d.* Wellington Coll., Salop
Jeune, O.E. *al.gm.ms.sh.* Jersey Modern S., St. Helier
Allinson, A.P. *ge.d.* Wellington Coll., Salop
Wolley, J.M. *ms.ma.ch.* Wellington Coll., Salop
Schroter, O.E. *a.al.gm.tr.sd.ch.* Oakes Inst., Walton, L'pool
King, H. *s.e.f.ch.* Kendrick Boys' S., Reading
Hughes, A.G. *gm.sd.ch.* Wellington Coll., Salop
Raven-Hart, R. *e.a.gm.sd.mu.* Drax Gram. S.
Carter, S.R. *gm.ch.* Wellington Coll., Salop
Gough, W.K. *ch.d.* Wellington Coll., Salop
Harrison, P.D. *gm.ms.sd.d.* Wellington Coll., Salop
de Morsier, T.E. *f.* Jersey Modern S., St. Helier
Frazer, R.F. *al.tr.ch.* Oakes Inst., Walton, L'pool
Webb, H.P. *e.ch.* Wellington Coll., Salop
Baldock, E.T. *al.* Mercers' S., Holborn, E.C.
Renney, C.H. Argyle H., Sunderland
Davis, B.C. *ch.* Penistone Gram. S.
Stevenson, J.C. *ch.* Atherstone Gram. S.
Berry, W.H.S. *d.* Kendrick Boys' S., Reading
Graham, G.S. *a.al.ch.* Oakes Inst., Walton, L'pool
Brown, A. *s.* High S. for Boys, Croydon
Gresham, H.T. *f.l.* St. Mary's Coll., Harlow
Oldham, E. Wellington Coll., Salop
Smith, B.T. Penistone Gram. S.
Jones, E.V. Elmfield Coll., York
Major, A.G. *sd.ch.* Wellington Coll., Salop
Coope, G.M. *ma.ch.* Hutton Gram. S.
Marsh, J. *ch.* Wellington Coll., Salop
Livermore, W.B. *ch.ph.* Tollington Schools, N.
Rabbinowicz, H.J. *sh.* Central Foundation S., Cowper St., E.C.
Addy, J.A. *ol.* Penistone Gram. S.
Townson, C.H. *ch.d.* Hutton Gram. S.
Robinson, S.H. *s.f.* Private tuition
Mercer, F. *al.* Oakes Inst., Walton, L'pool
Roberts, L.D. *ch.* Wellington Coll., Salop

FIRST CLASS [or SENIOR].

Pass Division.

Piquet, C.J. *al.f.* Clair-Val, Faldrouet, Gorey, Jersey
Le Prevost, E.St.J.deM. Froebel H., Devonport
Porter, E.W. *ms.* Southport Modern S.
Purdom, R. High S. for Boys, Croydon
Bradshaw, A.J. *s.* Southport Modern S.
Deuchars, H. *ch.d.* Ashford Gram. S.
Wright, N. *sd.* St. Helen's Coll., Southsea
Falkner, P. *e.* St. Mary's Coll., Harlow
Edkins, G.F. Gram. S., Shoreham
Paynter, J.E. *d.* Private tuition
Kissack, E.J. *al.ch.* Oakes Inst., Walton, L'pool
Blackman, W. *ms.ch.* Oakes Inst., Walton, L'pool
Oliver, K.M. *ch.* Wellington Coll., Salop
Lill, J. *ch.* Barton S., Wisbech
Hughes, W.O. Wellington Coll., Salop
Penhale, W.P. *bk.* Middle S., Holsworthy
Ford, R.K. High S. for Boys, Croydon
John, C.T.R. *ch.* Wellington Coll., Salop
White, S.A. Private tuition
Woodhouse, R.A. Hutton Gram. S.
Johnston, J.D. Private tuition
Wells, P.C. Winchester H., Bristol
Higson, R. Hutton Gram. S.
Hodgson, N. *bk.* Argyle H., Sunderland
Speeding, C.C. High S. for Boys, Croydon
Whyte, C.C. St. Mary's Coll., Harlow
Mayor, F.A. *d.* Private tuition
Nowill, C.J.F. *f.* Wellington Coll., Salop
Page, J. St. Leonards Coll. S.
Vautier, J.G. *ms.* Jersey Modern S., St. Helier
Hambly, D. Schorne S., Winslow
Tobitt, G.R. *e.* Valentia H., South Norwood
Woodhall, H.D.G. *ch.* Private tuition
Doidge, H.F. Elmfield Coll., York
Pratt, W.P. *ms.* High S., Brentwood
Smith, S.P. *e.* Private tuition
Ford, A.P. *al.* Mercers' S., Holborn, E.C.
Wolfers, A. *ms.* Margate Jewish College
Greenwood, E.W. Colebrook H., Bognor
Radford, C.W. Winchester H., Bristol
Huelin, G.W.V. *sh.* St. James's Coll. S., St. Helier
Easton-Cook, W.P. *bk.* Gram. S., Shoreham
Harper, W.F. *d.* Kendrick Boys' S., Reading
Triebel, L. *ge.* Poly. Secondary S., Regent St., W.
Lewis, D.S. *al.* Kingsholme S., Weston-super-Mare
Hutchinson, P.K. *ch.d.* Tollington Schools, N.
Leak, E. Drax Gram. S.
Roberts, O.H.S. *f.* Arlington Villa S., Brighton
Steers, L.G. *gm.* Winchester H., Bristol
Bateman, H.B.H. Gram. S., Cowes
Manaton, F.H. Chaloner's S., Braunton
Suhr, V.R. Gram. S., Shoreham
Escolme, R.F. *ch.* Penketh School
Watson, J.H. High S., Brentwood
Bates, J. High S. for Boys, Croydon
Kiernander, E.A. St. Aloysius' Coll., Hornsey Lane, N.
Taylor, J.C. High S., Brentwood
Kewley, R.C. Oakes Inst., Walton, L'pool
Kenyon, J. Penistone Gram. S.
Jones, J.L. *d.* Wellington Coll., Salop
Morris, H. Wellington Coll., Salop
Scholey, P.G. High S. for Boys, Croydon
Jones, W. Wadham S., Liskeard
Morley, D.E. *f.ch.* Paradise H., Clissold Park
Rix, L.J. Gram. S., Shoreham
Gregory, H. Private tuition
Nott, L.W. The College, Clevedon
Phillips, G.S. Old College S., Carmarthen
Bray, T. Eversley S., Stamford
Gardner, D.A. Oakes' Inst., Walton, L'pool
Hotson, W.A. *sh.* Mercers' S., Holborn, E.C.
Stockley, F.S. High S. for Boys, Croydon
Gaudin, R.B. Jersey Modern S., St. Helier
Kiddell, J.B. New Coll., Cliftonville, Margate
Montgomerie, W. Hutton Gram. S.
Davis, W.A. Mercers' S., Holborn, E.C.
Kent, R.E. Oakes Inst., Walton, L'pool
Unwin, F.A. Eye Gram. S.
Whitfeld, F.A.H. *d.* Cambridge H., Camden Rd., N.
Morris, A.F.W. *gm.ms.* High S. for Boys, Croydon
Wraight, O. *bk.sh.* High S., Romford
Bolton, R.W. Kibworth Gram. S.
Luce, R.W. Jersey Modern S., St. Helier
Smith, J. Brunt's Tech. S., Mansfield
Baker, R.A.L. Private tuition
Norris, W.W. Hillmartin Coll., Busby Place, N.W.
Malzard, J.C.T. Jersey Modern S., St. Helier
Gillson, T. *h.* Private tuition
Theobald, A. Dunheved Coll., Launceston
Thomas, F.M. Commercial Coll., Acton
Llewelyn, D.E.K. St. Mary's Coll., Harlow
Mollet, R. Private tuition
Bowes, E.S. Hayling Island S.
Hullaud, E.S. Kibworth Gram. S.
Needs, H.W. Boys' High S., Coalbrookdale
Redding, J.M. Private tuition
Currie, E.F. Private tuition
Wahn, W.H. Oakes Inst., Walton, L'pool
Wookey, E.E. *s.* The College, Clevedon
Brittan, S.V. St. Leonards Coll. S.
Gow, H. Elmfield Coll., York
Mason, N. Wellington Coll., Salop
Bell, F. Oakes Inst., Walton, L'pool
Jackson, F. *sh.* Private tuition
Wright, R.W. Elmfield Coll., York
Kemp, R.W. Winchester H., Bristol
Silver, B.J. Kendrick Boys' S., Reading
Bevan, H. Bell's Gram. S., Coleford
Birch, H.J. *ch.* Private tuition
Cullett, A. *d.* Private tuition
Herbert, B.C. Kersal S., Kersal Moor, Manchester
Jolly, R.W. *d.* Gram. S., Blackpool
Noel-Stansbury, B. Gram. S., Shoreham
Uncles, W. Gram. S., Goole

SECOND CLASS [or JUNIOR].

Honours Division.

Shovelton, L. *al.ch.* Hillary St. S., Walsall
White, A.H. *f.sp.* St. Mary's Coll., Harlow
Allinson, B.P. *ge.* Wellington Coll., Salop
Henstock, A.F.N. *a.f.* Queen Elizabeth's Gram. S., Ashburne
Priestley, E.C. *d.* Kendrick Boys' S., Reading
Dennis, W.L. *s.d.* Pupil Teacher Centre, Weymouth
Ward, J. *a.* High S., Brentwood
Arnold, H.J. *a.gm.bk.ph.* High S., Brentwood
Brown, W.M. *f.* Ebor S., Bexhill-on-Sea
Pearce, J.E. *f.l.ma.* Private tuition
Logan, G.B. *gm.ms.* Westmorland Rd. S., Newcastle-on-Tyne
Baudains, G. La C. *h.* Jersey Modern S., St. Helier
Fairclough, H. *e.f.* Private tuition
Newman, H.S. *s.h.a.al.bk.* Loughton School
Skidmore, R.R. *a.d.* Queen Elizabeth's Gram. S., Ashburne

BOYS, 2ND CLASS, HONS.—*Continued.*

Drummond, J.B. *a.al.d.* Westmorland Rd. S., Newcastle-on-Tyne
Knott, A.B. *a.al.ms.* Westmorland Rd. S., Newcastle-on-Tyne
Wallace, W. *bk.* Argyle H., Sunderland
Cumbers, A.B. *h.* High S., Brentwood
Stubbs, C.M. *d.* Bourne Coll. Quinton
Mason, R.J.H. *f.* Brighton Gram. S.
Dowell, A.W. *al.bk.* St. John's Coll., Green Lanes, N.
Hooper, H.E. *a.bk.d.* Pupil Teacher Centre, Weymouth
Kirkwood, T.W. *a.* Westmorland Rd. S., Newcastle-on-Tyne
McClymont, C.G. *ms.* High S., Brentwood
Brown, J.W. *al.gm.* Pomfret Coll., Pontefract
Penson, J.H. Ebor S., Bexhill-on-Sea
Mager, E.F. *d.* Mercers' S., Holborn, E.C.
Pomeroy, W. *d.* Poly. Secondary S., Regent St., W.
Sawyer, A.W.M. Private tuition
Chester, D. Gram. S., Shoreham
Baker, A.G. *bk.* High S., Brentwood
Gorner, V.J. *d.* Gram S., Aston-in-Makerfield
James, H.G. *d.* Montrose H., Plymouth
Hallinan, W.E. *d.* Abp. Tenison's S., Leicester Sq., W.C.
Rahtkens, G.A. Gram. S., Shoreham
Corder, A. *f.* Argyle H., Sunderland
Hughes, W.V. *al.f.* Lewisham S., Weston-super-Mare
Kendrick, H.M. *m.phys.ch.d.* Wellington Coll. Salop
Hatton, H.O. *d.* CivilServiceAcad., VictoriaBdgs., M'chstr
Strelitskie, D.L. Mercers' S., Holborn, E.C.
Roseby, R. *s.a.* Eversley S., Stamford
Wells, J. *ph.* Margate Comm. S.
Litchfield, J.B. *al.* Winchester H., Bristol
Billings, H.C. *a.al.* Vermont Coll., Lower Clapton
Nicholson, S. *g.* Froebel H., Devonport
Badham, R. Brunswick H., Maidstone
Frühauf, L.D. Private tuition
Kenyon, H.T.J. *s.* St. Olave's Gram. S., S.E.
Plumb, F.A. *bk.* Loughton School
Rogers, E.W. Bracondale S., Norwich
Carpenter, H. St. John's Coll., Green Lanes, N.
Holloway, G.W.E. Private tuition
Tuite, W.M.A. *f.* Eversley S., Southwold
Bates, J.G. Brunswick H., Maidstone
Bullock, O. Brighton Gram. S.
Cabot, J.G. Jersey Modern S., St. Helier
Ward, A. *ch.d.* Brunt's Tech. S., Mansfield
Williams, J.H. *ch.* Wellington Coll., Salop
Bailey, H.L *f.* Poly. Secondary S., Regent St., W.
Beaty, T.W. Grosvenor Coll., Carlisle
Bell, S.J. Hutton Gram. S.
Theakstone, F.S. *a.* Training Coll. Higher Grade S., York
Allison, C.M. *ch.* Wellington Coll., Salop
Bodin, H.D. Argyle H., Sunderland
Coates, G. *d.* Barton S., Wisbech
Scott, T. *al.ch.* Penketh School
Buckell, W.D.W. St. Helen'sColl., Southsea
Bailey, A.E. *ch.* Esplanade H., Southsea
Gibbs, E.L. *d.* Gram. S., Shoreham
Manson, T.W. 8 Albion Rd. E., North Shields
Saggerson, E. *al.d.* Canning St. Council S., Benwell
Barton, T. Grosvenor Coll., Carlisle
Edwards, J.M. St. Austell Pupil Teacher Centre
Neill, F.A. *ch.* Wellington Coll., Salop
Sandiford, E.T. *al.* Oakes Inst., Walton, L'pool
Warwick, J.A. Westmorland RoadS., Newcastle-on-Tyne
Fenwick, W. *f.d.* The Western Coll., Harrogate
Grylls, G. *ch.* St. Paul's S., W. Kensington
Bowen, F.W. *a.* Pupil Teacher Centre, Weymouth
Wilkinson, W.H. *phys.ch.d.* Secondary S., Guard St., Workington
Armstrong, C. Argyle H., Sunderland
Cashmore, F.M. UniversityCollegeS., W.C.
Chapman, G.S. *d.* Westmorland Rd. S., Newcastle-on-Tyne
Flindt, H.A. Oakes Inst., Walton, L'pool
Mudd, L.S. *bk.* Modern S., Gravesend
Whipp, W.A.S. *bk.* Gram. S., Shoreham
Berry, E. *gm.ch.d.* County Secondary S., Hyde
Cleall, S.M. *h.* Boys' High S., Warcham
Colver, E.W. Wellington Coll., Salop
Eames, A.J. *ch.* St. Olave's Gram. S., S.E.
Gay, F.W. *d.* The College, Weston-s.-Mare
Kent, S.D. *d.* St. Olave's Gram. S., S.E.
Walker, A.F. *f.* Queen Elizabeth's Gram. S., Ashburne
Green, A.H. Mercers' S., Holborn, E.C.
Hart, E.R. *f.* Private tuition
Jordan, W.T. Training Coll. Higher Grade S., York
Simpson, J.B. Wellington Coll., Salop
Dix, W.R. Gram. S., Shoreham
King, A.A. *h.* St. Helen's Coll., Southsea
Pollard, H.E. Penketh School
Seddon, F.L. Queen Elizabeth's Gram. S., Ashburne
Addenbrooke, R.G. King Charles I. S., Kidderminster
Curtis, W.G High S., Brentwood
Hinings, F.W.C. Blundell's S., Tiverton
Newbery, B. St. Leonards Coll. S.
Skinner, C.G. *ch.* Oakes Inst., Walton, L'pool

SECOND CLASS [or JUNIOR].

Pass Division.

[1]Rodda, B.C. Private tuition
[1]Chattin, A.E. High S. for Boys, Croydon
[1]Blampied, T. Le Q. Oxenford H., St. Lawrence, Jersey
[1]Harman, A.G. Private tuition
[1]Graham, G. Canning St. Council S., Benwell
[1]Flook, G. Sandwich School
[1]Broadbent, J.W.D. The Preston Gram. S., Stokesley
[1]Dallas, J. *d.* Hutton Gram. S.
Atkin, F. Elmfield Coll., York
Blay, V.L. *ch.d.* Private tuition
[1]Bridle, E.C. Gram. S., Chichester
Hecht, H.E. HerneH., Cliftonville, Margate
[1]Poole, F.W. St. James's Coll. S., St. Helier
Bramer, J.D.S. *ch.* Atherstone Gram. S.
Hornby, A.J.W. *d.* Richmond H., Handsworth
Mash, O.N. Frinton College
Wardle, J. *d.* Queen Elizabeth's Gram. S., Ashburne
Bickell, H.G.E. Portsmouth Council Secondary S.
Bilson, H.F. *a.ch.* Portsmouth Council Secondary S.
Colver, H. *ch.* Wellington Coll., Salop
Davis, H.G. *a.* Mercers' S., Holborn, E.C.
Forrest, T.H.N. Private tuition
[1]Hibbard, J. Winchester H., Bristol
[1]Jermine, J.H. *sh.* Private tuition
Mawby, D.S. *d.* Kibworth Gram. S.
Roberts, J.C. Cliftonville Coll., Margate
Smith, R.H. *d.* Modern S., Gravesend
Grace, N.V. Wellington Coll., Salop
Shaw, A.F. Southport Modern S.
Thomas, J.W. Wortley de Leeds Gram. S.
Tully, W.J. *f.* Queen Elizabeth's Gram. S., Ashburne
Beall, R.W. The Western Coll., Harrogate
[1]Bennett, L.G. Gram. S., Shoreham
Cochrane, R. St. John's Coll., Green Lanes, N.
English, S.A. CentralClasses, Long Sutton
Fletcher, D.W. *f.* St. Olave's Gram.S., S.E.
[1]Gaskell, I.J. *d.* Private tuition
Lewis, J.L.D. Private tuition
Mercer, E.D. *al.ch.* Oakes Inst., Walton, L'pool
Mould, R. *al.* Gram. S., East Finchley
Purchase, W.B. *al.* Private tuition
Adams, H. *bk.* Commercial Coll., Acton
Gaud, P.A. Froebel H., Devonport
Humphreys, L. *ch.* Oakes Inst., Walton, L'pool
Pearce, E.L.N. Training Coll. Higher Grade S., York
Seabrooke, S.H. *al.* St. Olave's Gram. S., S.E.
Smee, H.G. Mercers' S., Holborn, E.C.
Thacker, C.C. St. Olave's Gram. S., S.E.
Clement, H.A. *phys.* Wellington Coll., Salop
[1]Docking, C.W. High S. for Boys, Croydon
Forrest, E. *al.* Royal Gram. S., Clitheroe
Hales, E.A. High S., Brentwood
Mawer, P.U. Berkhamsted School
Millward, A.S. Poole Coll. S.
Bott, F.B. Atherstone Gram. S.
Browne, A.G. Brondesbury Coll.
Dunbar, J. *ch.d.* Arnot St. Council S., Walton, L'pool
Dyke, W.A. *a.* Blue Coat Boys' S., Hereford
[1]Inglis, J.W.B. JerseyModernS., St. Helier
Jones, L. *d.* High S. for Boys, Croydon
Traies, A. Mercers' S., Holborn, E.C.
Archdale, F. *bk.* Cliftonville Coll., Margate
Barnard, W.C.P. *ch.* St. Olave's Gram. S., S.E.
Le Marinel, T.G. *bk.* Oxenford H., St. Lawrence, Jersey
Whelan, H.M. St. Helen's Coll., Southsea
Bowen, C. St. Mary's Coll., Harlow
[1]Emms, L.B. St. Leonards Coll. S.
Jones, P.G. *bk.* Elmfield Coll., York
Nancarrow, S.H. *ch.d.* St. Austell Pupil Teacher Centre
Slater, W.M. Ellesmere S., Harrogate
Tuft, A.C. Private tuition
Barnes, J.N. Alderman Norman's S., Norwich
Bell, W.A. Aylwin Coll., Arnside
Chick, A.L. High S., Brentwood
Dye, W.H. Private tuition
Elliott, C.F. Private tuition
Elliott, H.J. *d.* Chaloner's S., Brauntou
Fell, H. Queen Elizabeth's Gram. S., Ashburne
Ferguson, G. *ch.* OakesInst., Walton, L'pool
Leman, C.E. St. Olave's Gram. S., S.E.
Lewis, D. Grocers' Company's S., Clapton
Parnwell, S.H. Mercers' S., Holborn, E.C.
Pierce, W.H. *ma.ch.* Hutton Gram. S.
Rashbrook, S.O. *al.* Private tuition
White, G.H.J. Commercial Coll., Acton
Williams, H. *d.* OakesInst., Walton, L'pool
[1]Dent, G.R. Ellesmere S., Harrogate
Rollinson, R.G. Modern S., Gravesend
Tomlinson, A.C. *ma.ch.* Hutton Gram. S.
Whitworth, W.C. Hearn H., Hampstead
Cunnew, G.A. High S. for Boys, Sutton
Ealand, P.L. Private tuition
Fry, W.K. Private tuition
Hadfield, E. Oakes Inst., Walton, L'pool
Lawrenec, A.F. St. Olave's Gram. S., S.E.
Taylor, A.R. Private tuition
Warren, A.H. St. Olave's Gram. S., S.E.
Young, R.A. *al.* Finsbury Park Coll., N.
Hutchinson, L.R. *bk.* Cliftonville Coll., Margate
Ramsbottom, R. University S., Southport
Sowerbutts, R. *d.* Preston Gram. S.
Taylor, E.J. Central Classes, Long Sutton
Tindal, J. *ch.* Queensberry S., Longton
Burge, G.A. Winchester H., Bristol
Cock, G. Devonport High S.
Davidson, A.R. Aylwin Coll., Arnside
McQuillen, G.B. *gm.* Rutherford Coll., Newcastle-on-Tyne
[1]Moor, A. Eversley S., Stamford
Rodda, S.A. Abbey S., Penzance
Seggie, A. Kendrick Boys' S., Reading
Waldegrave, A.H. *bk.* ModernS., Gravesend
Cundall, H.W. Gram. S., Ongar
[1]Edney, J. Blenheim H., Fareham
Lawrey, A. Gram. S., Hayle
Pulling, R.J.C. *bk.* St. John's Coll., Green Lanes, N.
Sewell, R. Grosvenor Coll., Carlisle
Shaw, C.G. Boy's High S., Wareham
Spencer, A.G. Pupil Teacher Centre, Weymouth
[1]Davies, G.M.P. Private tuition
[1]Foley, D. Private tuition
Hamilton, D.J.M. *a.* Oakes Inst., Walton, L'pool
Metzner, R.E. Richmond Hill School
[1]Millican, G.D. *bk.* Gram S., Shoreham
Todd, H.J. Brunswick H., Maidstone
Blommekoper, A. *bk.* St. John's Coll., Green Lanes, N.
Coombes, L. *f.* St. Mary's Coll., Harlow
Richards, E.C. *a.d.* Bell'sGram.S., Coleford
Walsh, G.P. Eversley S., Southwold
Charlton, E. Westmorland Rd. S., Newcastle-on-Tyne
Crauford, P.S. Gram. S., Shoreham
Craze, W.C.T. *f.* Gram. S., Hayle
Heald, H. *ch.* Hutton Gram. S.
Houghton, F. Grosvenor S., Bath
[1]Hughes, T.H. Gram. S., Blackpool
[1]McGee, J.F. Private tuition
Rowlands, F.G.J. The Palace S. Bewdley
Shaw, C. Wellington Coll., Salop
Woodhill, H. Gram. S., Chorlton-cum-Hardy
Aikenhead, R. Schorne S., Winslow
Bailey, W.G. Mercers' S., Holborn, E.C.
Broughton, W.H. *ch.* Private tuition
Chambers, E.R. Private tuition
Goldie, C.H. Lancaster Coll., West Norwood
Henderson, D.W. Mercers'S., Holborn, E.C.
Horsburgh, A.L. Oakes Inst., Walton, L'pool
[1]Hudson, A.C. Rose Hill High S., Bowdon
Huntley, H.E. *d.* The College, Weston-s.-Mare
Husk, F.J. *ch.* St. Olave's Gram. S., S.E.
Jack, G.G. Private tuition
Jones, R.W.T. *ch.* Wellington Coll., Salop
Lloyd, J. Private tuition
Marden, W. Private tuition
Parker, H. High S., Kirkby Stephen
Parr, J.M.W. Private tuition
Thomas, C.L. Gram. S., Shoreham
Archibald, H. *ch.* Hutton Gram. S.
Biles, H.C. Pupil Teacher Centre, Weymouth
Lyall, E. Canning St. Council S., Benwell
Paine, C.H. Gram. S., Shoreham
Pidduck, H.E. Sandwich School
Pow, H.E. *f.* Private tuition
Roberts, J.L. Cliftonville Coll., Margate
Viles, F.W. Gram. S., Redditch
Whitfield, G.M. Lancaster Coll., Morecambe
Blackmore, F.R. *d.* Kendrick Boys' S., Reading
Camm, W. *h.* PupilTeacherCentre, Ilkeston
Erdberg, M.J. Westmorland Rd. S., Newcastle-on-Tyne
Goode, J.W. Gram. S., Shoreham
[1]Grundy, R. Elmfield Coll., York
Hammer, V.M. Mercers'S., Holborn, E.C.
Hughes, B.E.H. Sandwich School
Lee, F. Magdala Academy, Portsmouth
Lunn, S.H. Newcastle Modern S.
Ollis, W.S. Private tuition
Pettyt, G.V. *al.* Private tuition
Robinson, F. *ch.* Hutton Gram. S.
[1]Anderson, C. Argyle H., Sunderland
Garnett, W. *a.* Modern Coll., Harrogate
Gibson, A.L. *bk.* The Western Coll., Harrogate
Kemp, A.D. *bk.* Brondesbury Coll.
[1]Mackenney, F.L. Jersey Modern S., St. Helier
Ridley, W. Canning St.Council S., Benwell
Wills, C.W. Grosvenor Coll., Carlisle
Anderson, E.H. High S. for Boys, Croydon
Easton, J. *f.* Private tuition
Heald, T.P. Sandwich School
[1]Higgs, H.J. Kendrick Boys' S., Reading
Liddle, S.C. Loughton School
Mynott, A.F. High S., Brentwood
Rowbottom, T. Private tuition
Wookey, G.R.P. *s.* The College, Clevedon
Wythe, P. *a.al.* UniversityCollegeS., W.C.
Alexander, C.B. Private tuition
Gilham, J. Brunswick H., Maidstone
Graham, R. CanningSt.CouncilS., Benwell
Hampton, S.F. Burgess Hill Coll.
Haselden, H.E. Gram. S., Ashton-in-Makerfield
[1]Isaac, S.J Private tuition
[1]Lloyd, P.C. Winchester H., Bristol
Motton, W.D. Abbey S., Penzance
Seymour, J. Westmorland Rd. S., Newcastle-on-Tyne
[1]Shacklock, A. Brunt's Tech.S., Mansfield
Tanner, G.F. High S., Brentwood
Beaton, F.G. *ch.* Portsmouth Technical Institute
Burniston, R. *a.* High S., Kirkby Stephen
Davidson, A.L. Private tuition
Esler, M.S. Private tuition
[1]Linton, W. Oxford H., South Croydon
Markham, C.G. Chaloner's S., Brauntou
Muirhead, T.D. Private tuition
Newey, E.M. *d.* KendrickBoys'S., Reading
Perkins, B.St.G. Colebrook H., Bognor
Shaw, R.C. *ch.* Hutton Gram. S.
Stainer, C.H. Private tuition
Bramble, J. CanningSt.CouncilS., Benwell
Frampton, W.J. Gram. S., Worthing
Goode, W.J. *ma.* Private tuition
Hill, H.C. St. Olave's Gram. S., S.E.
Hunt, W.J. Ebor S., Bexhill-on-Sea
Marsh, J.V. Catholic Gram. S., St. Helens
Marshall, L.E.J. CliftonvilleColl., Margate
Newcomb, L. *d.* Mercers'S., Holborn, E.C.
Prime, H. *bk.* TheCollege, Churwell, Leeds
Rogerson, W.A. Hutton Gram. S.
[1]Vose, J. Catholic Gram. S., St. Helens
Witting, T.N. *al.* Gram. S., Scarborough
Yates, F.C. Hutton Gram. S.
Cheune Private tuition
Grigg, T.A. Kendrick Boys' S., Reading
[1]Lowder, H.G. KensingtonColl., NevernSq., S.W.
[1]Martin, E.J. Gram. S., East Finchley
Reynolds, A.G. *bk.* Brondesbury College
Stephens, H.D. Private tuition
[1]Thompson, L. St. Boniface's Coll., Plymouth
Wakelin, A.F. *ch.* Private tuition
Beever, C.S. Froebel H., Devonport
Colley, D. Drax Gram. S.
Harker, W.E. Gram. S., Shoreham
Hughes, R.O. King Edward's S., Birmingham
Marshall, H. *d.* Brunt'sTech.S., Mansfield
Peters, H. Private tuition
Pullen, R.E. *a.* Winchester H., Bristol
Robinson, W.L. *ch.d.* Wellington Coll., Salop
Stephens, B.O'R. Private tuition
Willey, L.F. Raine's Foundation S., E.
Woodruff, C.J. Cliftonville Coll., Margate
[1]Chapman, W.B. Winchester H., Bristol
Else, L.S. *bk.* Brunswick H., Maidstone
Hancock, T.W. Private tuition
Holloway, E.C. Broomy Hill Acad., Hereford
Le Gros, F.C. *f.* Harleston H., St. Lawrence, Jersey
Saunderson, A.E. Private tuition
Shield, T. Westmorland Rd. S., Newcastle-on-Tyne
Teague, H.C. Bell's Gram. S., Coleford

BOYS, 2ND CLASS, PASS—*Continued.*

Williams, L. Mercers' S., Holborn, E.C.

Moore, I.S. Hutton Gram. S.
Newton, B.W. St. Olave's Gram. S., S.E.
Pitts, L. *d.* Queensberry S., Longton
Plummer, F.C. Private tuition
Sutton, D.H. Repton School
Womersley, F.M. Poole Coll. S.

Arthur, W.H.D. *ch.* Wellington Coll., Salop
Durand, N. Brunt's Tech S., Mansfield
Lake, W.J.
Elmhurst S., Kingston-on-Thames
Miller, S.A.
Skerry's Coll., Newcastle-on-Tyne
Swann, H. *al.* Private tuition
Taylor, E.J. *d.*
Chippenham & District County Secondary S.
1Thompson, W.N. Ivel Bury S., Biggleswade
Toone, W.A. Colebrook H., Bognor

Banister, W. Hutton Gram. S.
1Church, J.M.
Oxenford H., St. Lawrence, Jersey
Hewitson, W.A. Bailey S., Durham
Jones, R. Private tuition
Liddicoat, W. de G. *ch.*
St. Austell Pupil Teacher Centre
Pierce, L. Stone's City S., Exeter
1Sellers, N.B. Private tuition

Turner, E.P.
Kensington Coll., Nevern Sq., S.W.
Williams, W.P. *a.*
Arlington Park Coll., Chiswick

Barton, J.S. *d.*
The Douglas S., Cheltenham
Batten, K. Sunny Hill, Ilfracombe
Bellars, G.E. *s.* Barton S., Wisbech
Buckle, C. The Philological S., Southsea
Cohen, L.D. Private tuition
1Jones, S. Boys' High S., Coalbrookdale
Keen, C.M. *h.* St. Helen's Coll., Southsea
Lavell, A. Licensed Victuallers' S., Lambeth
Soar, D.V. Gram. S., Shoreham
Thorne, D. Blundell's S., Tiverton
Webb, S.J.F. Private tuition

Ball, R.H. The College, Weston-s.-Mare
Christian, J.P. Gram. S., Shoreham
Davis, A.W. Kendrick Boys' S., Reading
Fiddes, T.
Westmorland Rd. S., Newcastle-on-Tyne
Greenland, R. Oakes Inst., Walton, L'pool
1Harries, S. Perse Gram. S., Cambridge
Hughes, H.D. *d.* Oakes Inst., Walton, L'pool
Janes, N.T. Egham High S. for Boys
Johnson, J.A.F. St. Helen's Coll., Southsea
Martin, C.W. Private tuition
Nias, R.J.D. High S. for Boys, Croydon
Pern, M. Private tuition
Potter, D.T. *d.*
King Edward VI. Middle S., Norwich
Rees, J.E. Gram. S., Pencader
Sheridan, J. *ch.d.*
Stalybridge Technical Day S.

Bailey, A. Gram. S., East Finchley
Beveridge, J.F. *d.*
St. John's Coll., Green Lanes, N.
Bishop, J. Bungay Gram. S.
Darlison, H.A. Private tuition
1Fox, H.D. Private tuition
Jones, H.B. Hazelcroft, Weston-s.-Mare
Logie, R. *ch.* University S., Southport
Phillips, E.R. Gram. S., Ongar
Shackell, R. Grosvenor S., Bath
Sparks, W.H. Mercers' S., Holborn, E.C.
Spong, R.W. Gresham Coll., Southsea
1Stevens, P.B. Private tuition
1Stockley, C.I. High S. for Boys, Croydon
Topham, H. Private tuition

Compton, W.W. Gram. S., Shoreham
1Doolan, E.J. Catholic Gram. S., St. Helens
Milroy, N.A. Oakes Inst., Walton, L'pool
Slingsby, E.W. Mercers' S., Holborn, E.C.

Agar, H.E.
Training Coll. Higher Grade S., York
Braveny, F.J. Gram. S., Shoreham
Brown, S.G.T. Winchester H., Bristol
Graham, A.W. *ch.* Hutton Gram. S.
Harry, F.V.H. Gram. S., Hayle
Holloway, F.A. Winchester H., Bristol
Morris, P.C. Bell's Gram. S., Coleford
1Watkins, G. Gram. S., East Finchley

Burgess, L.J. *d.* Private tuition
Eastham, L. Hutton Gram. S.
Hards, H.S. Brunswick H., Maidstone
Moss, J.W.
Training Coll. Higher Grade S., York
Rigg, H.C. Private tuition
Waters, R.A. Private tuition

1Bairsto, A. Oakes Inst., Walton, L'pool
Castle, H.H. Private tuition
Dixon, H. Hutton Gram. S.
Duncan, C.E. Ellesmere S., Harrogate
Ellis, G.G. Private tuition
Evans, W.D. *ch.*
Ferndale Secondary S., Rhondda
1Knox, J. Skerry's Coll., Newcastle-on-Tyne
Rowland, A. Mr. Hunter's S., Bolsover

Campbell, F.R.
St. Aubyn's, Woodford Green
1Coleman, R.J.
Leigh Hall Coll., Leigh-on-Sea

Crouch, H.O. Elmfield Coll., York
Esilman, A. Private tuition
Fisher, C.F.
Licensed Victuallers' S., Lambeth
Froome, A. Kendrick Boys' S., Reading
Hutchings, R.S. *d.*
Chippenham and District County Sec. S.
Johnson, I.W.
Gram. S., Ashton-in-Makerfield
Quelch, A.F. Brunswick H., Maidstone
Read, W.J. Bungay Gram. S.
Rhodes, N. Wellington Coll., Salop

Barrett, J.
The School, Wellington Rd., Taunton
Boden, E. *d.* Boys' High S., Coalbrookdale
Bolton, H.F. Hutton Gram S.
Camidge, H.
Training Coll., Higher Grade S., York
Greaves, S.S. Private tuition
Mansfield, J.A. Brunswick H, Maidstone
Millership, A.
Pupil-Teacher Centre, Ilkeston
Neville, C. Pupil-Teacher Centre, Ilkeston
Pattison, J. Canning St. Council S., Benwell
Skey, C.H. Cliftonville Coll., Margate
Smith, R. *d.* Mount H., Ryde
Sussams, W.L.
King Edward VI. Middle S, Norwich

Davey, J.M. Ellesmere S., Harrogate
Elphick, W. Highfield S., Chertsey
Grant, S.T. High S. for Boys, Croydon
Masson, A. Mercers' S., Holborn, E.C.
Mealor, E.
Prep. Classes, George St., Altrincham
Raynold-Gill, H.E. *d.* Private tuition
Squire, T.R. Newcastle Modern S
Thomas, A.E. *d.* Bourne Coll., Quinton
Tresidder, C.T. Private tuition

Butler, H.O'N. Private tuition
Carpenter, J.S. Steyne Modern S., Worthing
Cotton, W.M.V. Gram. S., Shoreham
1Fraser, A.F. Blundell's S., Tiverton
Halden, K. Mossley Hall S., Congleton
Jenkins, H.C. *f.* Haverfordwest Gram. S.
Mytton, J. *a.ms.* Gram. S., East Finchley
Walsh, F.H. Gunnersbury S., Chiswick

Bates, H.J. *f.* Private tuition
Evison, C.T. Barton S., Wisbech
Fletcher, F.E. The College, Clevedon
Gration, D.W. Sutton Park School
Green, F.C. Modern S., Gravesend
Hall, P.E. Arlington Park Coll., Chiswick
Kean, E.G. Penketh School
Mullock, C.V. Collett H., Bournemouth
Pollitt, A.E. Private tuition
1Roberts, S.B. Private tuition
1Slack, J.N. Gram. S., Scorton
Taylor, H.
Queen Elizabeth's Gram. S., Ashburne
Thomson, P.H. Hanley Castle Grams. S.
Tomlinson, R.J. Modern S., Woking
Wilson, C.H. Private tuition

Canham, C.A.
King Edward VI. Middle S., Norwich
Cresswell, L.J. *a.*
Canning St. Council S., Benwell
Davoren, V.A. Private tuition
Grice, H.G. Colebrook H., Bognor
Hocking, H.F. Oakes Inst., Walton, L'pool
Langmaid, A.C. Gresham Coll., Southsea
Lethaby-Morgan, B. Private tuition
Roach, W.F. Gram. S., Hayle
Shepard, N. Margate Comm. S.
Shrimpton, A.H.N.
The College, Weston-s.-Mare
Talbot, P. *d.* Modern S., Gravesend
Turnley, W.E. Langharne S., Southsea
Woodroffe, S.W.
Steyne Modern S., Worthing

Beale, R.G.F. Taunton School
Birkett, M. Aylwin Coll., Arnside
Day, F.J. *bk.* Modern S., Gravesend
Easton, G.J.
King Edward VI. Middle S., Norwich
Harding, G.A. Elmside S., Red Hill
Hogben, F.L. Sandwich School
Keer, P.R. Modern S., Woking
Russ, S.H. Queen's College, Taunton
1Saunders, H. High S., Romford
Willerton, B. Spilsby Gram. S.

Arnold, L.M. St. Helen's Coll., Southsea
Clibborn, P.V. Loughton School
Cooper, L.B. Stoneleigh S., Cockermouth
Gaverick, R.H. Gunnersbury S., Chiswick
Greene, J. Wolverhampton Gram. S.
1Hobbs, A.K. Steyne Modern S., Worthing
LeGresley, E.F. *f.*
St. James's Coll. S., St. Helier
Price, H. Private tuition

Bow, F. Brunswick H., Maidstone
Darbyshire, W.P.
Gram. S., Ashton-in-Makerfield
Dyer, L.C. Gram. S., Shoreham
Genge, A.L.T. Campbell H., Bristol
Townshend, O.B. Private tuition
Wass, A. Canning St. Council S., Benwell
Watson, W.I.J.
Buda Coll., Aldrington, Hove
Young, O.C. Argyle H., Sunderland

Baker, G. Private tuition
Bickerstaff, R. Oakes Inst., Walton, L'pool
Bradley, W.E. Pannal Ash Coll., Harrogate

Cockerell, W.F. St. Mary's Coll., Harlow
Forsaith, L. *d.* High S. for Boys, Croydon
Gordon, W.H.C. Queen's Coll., Taunton
Lillywhite, H. St. Mary's Coll., Harlow
Manaton, A.G. Chaloner's S., Braunton
1Piper, H.S.T. *d.* Private tuition
1Radford, S.D. Ryde H., Ripley, Woking
Wright, F.E.
King Edward VI. Middle S., Norwich

Bolton, J.N. Gram. S., Shoreham
Broadhurst, A.E.
Boys' High S., Coalbrookdale
Brown, E.J. High S. for Boys, Croydon
Burbidge, D. St. Mary's Coll., Harlow
Delves, N.D. *bk.* Roborough S., Eastbourne
Eales, R.H. *bk.* St. Winifred's S., Torquay
Gamble, H.N.
King Edward VI. Middle S., Norwich
Hampton, S.A.
Russell Endowed S., Ledbury
Laurie, T.W. Private tuition
Olorenshaw, A.J.
King Edward VI. Middle S., Norwich
Robinson, C.G. Pannal Ash Coll., Harrogate
1Rose, F.M. Schorne S., Winslow
Stubbs, W. Oakes Inst., Walton, L'pool
Tyson, E.O. *ma.d.* Drax Gram. S.
Wagstaff, W.T. St. Winifred's S., Torquay

Bretton, F. Loughton School
Gurney, J.B. Hanley Castle Gram. S.
Hopwood, W.A. *ch.* Private tuition
Perry, H.G. *d.*
London Coll. for Choristers, Paddington

Ellison, S. Modern Coll., Harrogate
Hogan, J.A.C. Sandbach School
King, E.A. St. Winifred's S., Torquay
Lyon, N. *f.* St. Mary's Coll., Harlow
Palmer, H.L.
The School, Wellington Rd., Taunton

Backhouse, B.S. Wortley de Leeds Gram. S.
Coles, L.G. Wilton H., Exeter
Evans, T.A. *ch.*
Kersal S., Kersal Moor, Manchester
Fletcher, S.R.H.
Lancaster Coll., Morecambe
La Place, H. St. Mary's Coll., Harlow
MacNab, C. Canning St. Council S., Benwell
Maddock, D.W. Wellington Coll., Salop
Makinson, C.W. Private tuition
Mottershead, F.J.
Bradley High S., Newton Abbot
Paterson, H. Modern Coll., Harrogate
1Pledge, R.S. St. Winifred's S., Torquay
Stubbs, H.R. Gram. S., Worthing

Bonwick, L.C.T.
High S. and Comm. Coll., Forest Gate
Crosby, W.N. Modern Coll., Harrogate
Durban, F.W.G. Sandwich School
Ost, P.W. Wellington Coll., Salop
Pearson, H.
Queen Elizabeth's Gram. S., Blackburn

Adamson, E. Private tuition
Brindle, H. Private tuition
Dickin, E.S. Bickerton H., Birkdale
Ellicott, B.W. *bk.d.*
St. Winifred's S., Torquay
Harrison, P.W. Melbourne Coll., Anerley
O'Farrell, G.H.M.C.
St. Helen's Coll., Southsea
Phillips, J.W. *al.* Private tuition
Williams, J.M.
Queen Elizabeth's Gram. S., Ashburne

Atkins, J.C. Chaloner's S., Braunton
Bell, J.A. Rastrick Gram S., Brighouse
Broxup, E.C. Margate Comm S.
Dennes, T.C. Kendrick Boys' S., Reading
Fletcher, R.K. High S. for Boys, Croydon
Hutchinson, W. The Northern Inst., Leeds
Jennings, E.P. Manor H., Clapham Common
Rodgers, H.F. Gram S., Ongar
Scott, D.C. Eastbourne College
Smith, R.B. *bk.*
Clifton Coll., North Shore, Blackpool
Snape, B. Hatfield Coll., Doncaster
1Soares, V.H. Private tuition
Whalley, T. Hutton Gram. S.
Williams, A.G. The College, Weston-s.-Mare

Browell, H.P. Mercers' S., Holborn, E.C.
Carter, A.C. University Coll. S., W.C.
Collings, J. Brunswick H., Maidstone
Cuninghame, A.W. Grosvenor S., Bath
Fox, W. Private tuition
Hewitson, A. High S., Kirkby Stephen
Lewis, F.D.
Oxenford H., St. Lawrence, Jersey
Moir, N.F.M. Steyne Modern S., Worthing
Petchey, C. Margate Comm. S.
Picot, C.H. Queen's Coll., Taunton
Robinson, A. Winchester H., Bristol
Welch, R.F. The Palace S., Bewdley

Buchan, S.P. Froebel H., Devonport
Buckle, J. Eton H., Southend-on-Sea
Cartledge, A. Queensberry S., Longton
Dalton, B.N. Oxford H., South Croydon
Evans, A.G. Private tuition
Farquharson, H.E.C.
Steyne Modern S., Worthing
Gordon, M. Private tuition
Head, H.K. Charlecote S., Worthing
Redman, E.G. Sandwich School
Shoesmith, H.P. Private tuition

Wyllie, A.S. Herne H., Cliftonville, Margate
Zeper, M. Claughton Coll. S., Birkenhead

Adlam, H.G. Mount H., Ryde
Beeby, O.
Queen Elizabeth's Gram. S., Ashburne
Brown, A.S.
London Coll. for Choristers, Paddington
Harcourt, H.R.
King Edward VI. Middle S., Norwich
Harrison, J.R. High S., Kirkby Stephen
Hersey, H.R. Sutton Park School
Pessers, G.A.N. Langharne S., Southsea
Polge, W.E. High S. for Boys, Croydon
Roberts, J. Bradley High S., Newton Abbot
Roberts, W.J.
Oxenford H., St. Lawrence, Jersey
1Scoble, H. Bell's Gram. S., Coleford
Thomas, R.W. Private tuition
Vaisey, C.N. Grosvenor S., Bath

Crowe, W.N.
King Edward VI. Middle S., Norwich
Discombe, W.H.
Bradley High S., Newton Abbot
Du Feu, T.A. Jersey Modern S., St. Helier
Jarvis, J.H. Wellington Coll., Salop
Norman, J. Gram. S., Devizes
Prain, S.D. Jersey Modern S., St. Helier
Rowe, E.W.T. Waterlooville Coll., Cosham
Spaeth, C.L.L.J. Richmond Hill School
Spicer, A.H.
Licensed Victuallers' S., Lambeth
Spry, R.G. Private tuition
Wooldridge, F.G. Modern S., Woking

1Bracewell, G.A. *ch.* Private tuition
1Calvert, W.F. Drax Gram. S.
Mason, H.L. Brunswick H., Maidstone
McRae, R.T. Private tuition
Rayner, F.W. Blue Coat Boys' S., Hereford
Ryan, J.F. Brondesbury College
Salter, R.W. Steyne Modern S. Worthing
Tyrer, C. St. J. Private tuition
Wilson, W.T. University S., Southport.

Bridger, F.T. Ryde H., Ripley, Woking
Hopper, R.F. Private tuition
Hopps, A. Drax Gram. S.
Hutchinson, J.W. Drax Gram. S.
Minifie, G.R. Private tuition
Simpson, T.G.
St. James's Coll. S., St. Helier
Swires, F. Private tuition

Chambers, R. Modern S., Gravesend
1Clarke, C.G. Catholic Gram. S., St. Helens
Dancer, G.U.J. *a.* Private tuition
Jinks, J.C. Epworth Coll., Rhyl
Pritchard, G.P. Private tuition
Roberts, H.F. Jersey Modern S., St. Helier
Scott, H. Modern Coll., Harrogate
Turnham, T.S.
Licensed Victuallers' S., Lambeth

Bell, N.M.
Arnold H. with Waterloo Coll., N'hampton
Elleray, J.P. Private tuition
Haggett, H.G. Collegiate S., Bridgwater
Morrey, C.A. *ch.*
Lancaster Coll., Morecambe
Peirce, E.R. The College, Weston-s.-Mare
Power, D. Private tuition
Ransford, L.G. Private tuition

Impey, L. Manor H., Clapham Common
Ladmore, H.E. *bk.*
Blue Coat Boys' S., Hereford
McRae, A. Private tuition
Thatcher, N.F. Winchester H., Bristol
Vergette, T. Barton S., Wisbech

Bottomley, H. Pannal Ash Coll., Harrogate
Boucher, S.P. Private tuition
Farmer, W.S. Spilsby Gram. S.
Florey, A.E. Gram. S., Ongar
Pearce, R. Gram. S., Hayle
Shaw, A.D.
London Coll. for Choristers, Paddington

Haywood, C. Private tuition
Stone, A.H.
King Edward VI. Middle S., Norwich
Thomas, A.M. Private tuition
Turnham, A.B. St. Mary's Coll., Harlow
Vincent, G.M. High S. for Boys, Croydon

Bickerdike, O. Drax Gram. S.
Bickford, A. Wilton H., Exeter
Edrich, E.S.
King Edward VI. Middle S., Norwich
Jenkinson, I.
Gram. S., Ashton-in-Makerfield
Peermund, R.E.
Licensed Victuallers' S., Lambeth
1Snowden, G.T. Private tuition
Yeo, C.C. The Middle S., Holsworthy.

THIRD CLASS.

Honours Division.

Curtis, S.J. *e.al.f.*
Kendrick Boys' S., Reading
Fawcett, S.H. *s.e.h.a.al.gm.d.*
Westmorland Rd. S., Newcastle-on-Tyne
Harrison, R. *e.a.gm.f.l.* Scarborough College
Hunt, R.F. *a.al.bk.* Richmond Hill S.

BOYS, 3RD CLASS, HONS.—*Continued.*

Brown, E.R. *e.al.* Penketh School
Green, J.N. *e.al.d.* Sandyford Rd. S., Newcastle-on-Tyne

Cheesmond, H. *s.e.a.al.gm.d.* W. Jesmond Council S., Newcastle-on-T.
Guiton, T. *e.* Oxenford H., St. Lawrence, Jersey
Olive, W. *f.ch.d.* Penketh School

Wilson, S.F. *a.al.gm.d.* Jersey Modern S., St. Helier
Leaver, H.R. *a.sc.ch.* Penketh School

Caunce, A E. *g.al.gm.d.* Oakes Inst., Walton, L'pool
Garft, G.W. *e.a.al.* Gram. S., Welshpool

Gosling, F.H. *e.a.al.gm.* Bell's Gram. S., Coleford
Rolley, P. *a.al.f.d.* Gram. S., Shoreham

Myhill, G.A. *s.e.al.d.* Saham Coll, Watton
Watson, A. *a.al.d.* W. Jesmond Council S., Newcastle-on-T.

Barber, N.B. *e.a.al.d.* Froebel H., Devonport
Goodwin, F.W. *e.a al.bk.* Brunswick H, Maidstone
Gumprecht, E.H.M. *e.h.a.al.d.* Loughton School
Logan, J. *e.al.gm.d.* Westmorland Rd. S., Newcastle-on-Tyne
Soppitt, R. *e.al.gm.* Sandyford Rd. S., Newcastle-on-Tyne

Allan, R.C.J. *e.a.al.d.* Westmorland Rd. S., Newcastle-on-Tyne
Blackmur, C.R. *e.a.d.* Gram. S., Ongar
Bolton, H. *s.a.al.d.* W. Jesmond Council S., Newcastle-on-T.
Kennedy, C.S. *e al.d.* Sandyford Rd. S., Newcastle-on-Tyne
Litster, R. *s.al.gm.* Sandyford Rd. S., Newcastle-on-Tyne

Horne, H. *s.e al.d.* Sandyford Rd. S., Newcastle-on-Tyne

Barnard, E.J. *e.a.al.* St. John's Coll., Green Lanes, N.
Duns, R. *a.gm.d.* W. Jesmond Council S., Newcastle-on-T.
Halliwell, E. *e.a.* Gram. S., Wilmslow

Border, R. *s.e.h.al.* Gram. S., Dawlish
Hall, T.B. *al.* Sandyford Rd. S., Newcastle-on-Tyne
Loyd, H.E. *e.h.a.* Steyne School, Worthing
Stockdale, G.W. *s.e.a.d.* Gram. S., Scarborough

Cockrill, S.R. *e.a.al.* King Edward VI. Middle S., Norwich
De Lasalle, A. *al.f.* Rostrevor H., Folkestone
Evans, S. *a.al.gm.* Westmorland Rd. S., Newcastle-on-Tyne
Grimwade, S.A. *a.al.gm.sc.d.* Wellington Coll., Salop
Jouanno, C. *e.a al.* Cliftonville Coll., Margate
Poole, A.H. *e.a.al.d.* Cliftonville Coll., Margate
Stephens, W.K. *a.al.gm.* Froebel H., Devonport
Trigg, C.T. *a.al.d.* Westmorland Rd. S., Newcastle-on-Tyne

Brill, B. *al.d.* Gram. S., Wallington
Diver, O. *e.a.d.* St. Leonards Coll. S.
Pickering, G.C. *e.h.a.d.* Saham Coll., Watton

Ballantyne, J. *a.al.d.* Westmorland Rd. S., Newcastle-on-Tyne
Knott, C.R. *al.gm.* Westmorland Rd. S., Newcastle-on-Tyne
Midgley, J. *s.d.* Penketh School

Harris, W.B. *a.al.d.* Taunton School
Raimes, L. *s.a.* W. Jesmond Council S., Newcastle-on-T.
Shillaker, H. *al.d.* Eversley S., Stamford
Turner, A.G. *a.al.* Oakes Inst., Walton, L'pool

Brundrett, F. *e.a.al.* Gram. S., Wilmslow
Dickinson, P. *al.gm.* Sandyford Rd. S., Newcastle-on-Tyne
Le Breton, T.V. *a.* Jersey Modern S., St. Helier
Martin, J.N. *e.* Homeleigh, Downham Market
Morrin, J. *a.al.* Westmorland Rd. S., Newcastle-on-Tyne
Reavely, T.C. *al.d.* Westmorland Rd. S., Newcastle-on-Tyne

Goitein, H. *s.he.* Maida Vale S., W.
Traves, S. *s.al.* Sandyford Rd. S., Newcastle-on-Tyne
Walford, R.S. *a.f.l.* Cambridge House, Camden Rd., N.
Warren, J.E. *h.a.al.d.* Blenheim H., Fareham

Bradbury, C.H. *al.d.* Wellington Coll., Salop
Heaney, J. *gm.* Sandyford Rd. S., Newcastle-on-Tyne
Johnson, C.F. *e.a.al.* Taunton School

Laurens, S.J. *a.gm.f.* Jersey Modern S., St. Helier
Pond, C.F. *h.a.d.* Colebrook H., Bognor

Bambrough, H. *e.h.* Sandyford Rd. S., Newcastle-on-Tyne
Capell, L.H. *e.l.* Kibworth Gram. S.
Chapman, S.R. *a.* St. John's Coll., Green Lanes, N.
Cullum, T.H. Private tuition
Dodson, H. *e.a.al.* Hutton Gram. S.
Henderson, C.P. *e.a.f.* Steyne S., Worthing
McCombe, F.W. Cliftonville Coll., Margate
Moore, G.A. *s.a.al.d.* Highbury Park S., N.
Piper, S. *a.d.* Argyle H., Sunderland
Scott, R.M.C. *e.* Private tuition

Austin, J.L. *e.a.d.* Colebrook H., Bognor
Beavis, J.H. *a.* St. John's Coll., Green Lanes, N.
Caisley, W. *e al.* Sandyford Rd. S., Newcastle-on-Tyne
Day, H.V. *al.* Jersey Modern S., St. Helier
Jamieson, R.M. *e.al.d.* Westmorland Rd. S., Newcastle-on-Tyne
Penhale, R.H. *s.a.* The Middle S., Holsworthy
Piaggio, E.E. *e.a.* St. Dunstan's Coll., Margate
Seymour Jones, D. *a.gm.d.* Wellington Coll., Salop
Stobbs, T.H. *al.gm.* Elmfield Coll., York
White, K. *a.al.d.* King Edward VI. Middle S., Norwich

Andrews, H.L. *a.al.* Cathcart Coll., N.
Hill, H. *a.al.d.* Westmorland Rd. S., Newcastle-on-Tyne
Hill, M.S. *s.e.h.* Loughton School
Lewis, E.W. *a.al.* Taunton School
Stanborough, L.F. *s.e.* Gram. S., Shoreham
Stewart, V. Charlecote S., Worthing
Tytler, R. *al.* Westmorland Rd. S., Newcastle-on-Tyne

Ainsworth, J.M. *h.* Bickerton H., Birkdale
Collins, C.R., *e.a.d.* St. Winifred's S., Torquay
Darrington, C.P. *d.* Sandwich School
Follit, J.F. *s.e.f.l.* Colchester H., Clifton
Leprestre, G. *f.l.* King Charles I. S., Kidderminster
Trotter, J.R. *al.gm.d.* Sandyford Rd. S., Newcastle-on-Tyne
Walton, H.B. *e.a.* Bourne Coll., Quinton

Abbott, E.S. *d.* Drax Gram. S.
Coote, P.E. *e.f.* Cambridge H., Camden Rd., N.
Dickson, A.E. *a.gm.* Gram. S., Shoreham
Prince, T.G. Elmfield Coll., York
Whiffin, H.J. Loughton School
Young, J.A.C. High S., Brentwood

D'Authreau, W.V. *al.* Jersey Modern S., St. Helier
Dorey, J.A. Oxenford H., St. Lawrence, Jersey
Ford, N. *a.al.* Gram. S., Wallington
Innes, W.K. *e.al.* Aylwin Coll., Arnside
Larking, C.G. *a.* King Edward VI. Middle S., Norwich
Pinchen, F. *a.d.* W. Jesmond Council S., Newcastle-on-T.
Rudderham, W.J.A. *a.al.* King Edward VI. Middle S., Norwich
Stewart, C.P. King's Coll., Wimbledon
Victor, L.J. *s.e.h.a.al.* Mission S. for Hebrew Children, Streatham Common
Wetherell, S. *s.d.* Drax Gram. S.

Davis, E.A. Cliftonville Coll., Margate
Denny, V.E.G. *a.* Ellesmere S., Harrogate
Goldsmith, F.R. Modern S., Gravesend
Joyce, J.H. *a.d.* Ivel Bury S., Biggleswade
Le Feuvre, P. *a.f.d.* Harleston H., St. Lawrence, Jersey
Peacock, L. *al.d.* York Manor S.
Spanton, C.G. *e.al.* King Edward VI. Middle S., Norwich

Allison, F.G. *f.d.* Wellington Coll., Salop
Barkell, R.C. *s.* The Middle S., Holsworthy
Cutter, T. *a.al.* Westmorland Rd. S., Newcastle-on-Tyne
Davies, S.H. *a.bk.* Gram. S., Ongar
Fuller, H.A. *d.* St. Leonards Coll. S.
Hayes, T.H. *d.* The Palace S., Bewdley
Herring, R.S. *a.* Saham Coll., Watton
Lee, J.H. *a.al.f.* High S. for Boys, Croydon
Matthews, G.L. New College, Worthing
Pocock, N.S.D. Belton H., Eastcliff, Broadstairs
Richardson, A. *al.* Drax Gram. S.

Burt, W.L. *e.a.* Taunton H., Brighton
Diment, R. *e.al.* Canning St. Council S., Benwell
Filshie, R.M. *e.g.d.* King Edward VI. Middle S., Norwich
Fisher, J.R. *s.a.al.d.* Sandyford Rd. S., Newcastle-on-Tyne
Gateeliff, N. *s.al.* Bickerton H., Birkdale
Godfrey, J.A. St. John's Coll., Green Lanes, N.
Holliday, T.H. *e.a.* Grosvenor Coll., Carlisle
Kelsall, J.J. *s.d.* Penketh School
Knightbridge, T.W. *a.al.* High S., Romford
Lueas, H.J. *e.a.* Richmond Hill School

Massey, A. Bourne Coll., Quinton
Richards, W.I. *e.gm.* Wellington Coll., Salop
Rowley, R Y. *e.* Sandyford Rd. S., Newcastle-on-Tyne
Shaw, W. *al.* Gram. S., Welshpool
Urwin, H. *a.* W. Jesmond Council S., Newcastle-on-T.
Wilson, T.G. *g.al.* St. John's Coll., Brixton

Allen, J.E. *al.* High S. for Boys, Croydon
Broxup, C. *s.e.* Margate Comm. S.
Burton, C.E.B. *e.d.* West Cliff S., Preston
Higgs, R.D. The Palace S., Bewdley
Hodges, G. *a.d.* The Palace S., Bewdley
Radnor, C.B. *e.* Cliftonville Coll., Margate
Turner, C.H. *f.* Gram. S., Wilmslow
Weakley, H. *e.* High S. for Boys, Croydon
Whiley, E.A. Modern Coll., Harrogate

Baines, T.H. Mossley Hall S., Congleton
Baxter, G.S. *e.l.* Cedar Towers, Tankerton
Chapman, L. *al.* Canning St. Council S., Benwell
Elliot, W. *a.al.d.* Sandyford Rd. S., Newcastle-on-Tyne
Jeffrey, J. *s.* W. Jesmond Council S., Newcastle-on-T.
Lester, G.E. *e.* Taunton School
Lones, J.A. *gm.d.* Wellington Coll., Salop
Price, J.S. *e.a.al.* Blue Coat Boys' S., Hereford
Quayle, E.C.O. Scarborough College
Russell, A.E. *e.d.* Private tuition
Skey, C.O. *e.* Cliftonville Coll., Margate
Taylor, J.T. *a.* Gram. S., Wilmslow
Wharrier, J. *al.d.* Canning St. Council S., Benwell
White, F.T. *e.a.* Taunton School

Banks, N.C. *e.a.al.* Oakes Inst., Walton, L'pool
Beardmore, G. *al.d.* Walsall Comm. Coll.
Bennett, P.J. Iselden S., Bournemouth
De La Cour, E.B. *f.d.* Harleston H., St. Lawrence, Jersey
Dubuis, L.G.A. *d.* Braeknell College
Knight, C.R. *s.d.* Licensed Victuallers' S., Lambeth
Le Cornu, E.R. *f.* Harleston H., St. Lawrence, Jersey
Lee, T.A. *d.* Westmorland Rd. S., Newcastle-on-Tyne
Letch, J. *al.* Sandyford Rd. S., Newcastle-on-Tyne
Mills, J. Westmorland Rd. S., Newcastle-on-Tyne
Milton, G. All Saints Choir S., Clifton
Nicoll, V. *al.gm.* Gram. S., Ongar
Palmer, C.F. *g.* Pierremont Coll., Broadstairs
Picot, W.P. *a.* Oxenford H., St. Lawrence, Jersey
Pyatt, P.H. *e.a.al.* Richmond Hill School
Rawson, D.S. *e.a.* Endcliffe Coll., Sheffield
Wolley, T.W.M. *a.* Wellington Coll., Salop

Baragwanath, R.A. *s a.d.* Gram. S., Hayle
Burns, H.S.R. *e.* Herne H., Cliftonville, Margate
Gawler, A.E.J. *e.* Taunton School
Loram, D.S. Froebel H., Devonport
Makinson, J. *e.* Oakes Inst., Walton, L'pool
Nickel, E.H. *a.d.* Comm. S., Maidstone
Pennington, J. *e.al.* Drax Gram. S.
Salman, C. *al.* Kendrick Boys' S., Reading
Stubbs, C.A. *a.d.* Gram. S., Shoreham
Whiteman, J.D. *e.* Gram. S., Wallington
Wright, H.J. Elmhurst S., Kingston-on-Thames

Allpress, G.T. Jersey Modern S., St. Helier
Bacon, W.D. Brunswick H., Maidstone
Dandridge, S G. Steyne S., Worthing
Franklin, C.W. *a.* The Chandos Gram. S., Winchcombe
Graves, T.H. *e.a.* Modern S., Gravesend
Hancock, C.J. *a.* St. John's Coll., Green Lanes, N.
Holborn, H.R. *e.a.d.* St. Leonards Coll. S.
Mackie, T. *a.d.* Aylwin Coll., Arnside
Smith, W.A. Gram. S., Ongar
Sowman, U.D. *d.* Pierremont Coll., Broadstairs
Tucker, M.H. St. George's Coll., Wimbledon
Turner, A M. *a.* New College, Worthing
West, D.A. *a.* St. Dunstan's Coll., Margate
Williamson, T.H. *e g.* Oakes Inst., Walton, L'pool

THIRD CLASS.

Pass Division.

²Morgan, R.C. *ch.* Wellington Coll., Salop
²King, S.C. Fitzroy S., Crouch End
²Martin, T.M. *ch.* Wellington Coll., Salop
²Martin, O.S. Blundell's S., Tiverton
²Fletcher, C. *ch.* St. Olave's Gram. S., S.E.
²Bertram, G.W. Oxenford H., St. Lawrence, Jersey

²Harris, H.A. St. Helen's Coll., Southsea
²Little, R.S. Grosvenor Coll., Carlisle
²Loch, E.E. Grosvenor Coll., Carlisle
²Findon, F.J. *al.* The College, Weston-super-Mare

²Smith, A. Canning St. Council S., Benwell
²Buxton, W.A. Cliftonville Coll., Margate
²Florey, R.J. Gram. S., Ongar
²Wright, P.C. Arlington Pk. Coll., Chiswick

²Carstairs, G.S. Blundell's S., Tiverton
²Cornelissen, L.S. Ryde H., Ripley, Woking
²Brewer, J.E. *bk.* Bradley High S., Newton Abbot
²Palmer, G. Mercers' S., Holborn, E.C.

²Shrimpton, A.H. Oxford County S., Thame
²Stock, W.H. Littleton H., Knowle

²Bouckley, F.G. Aylwin Coll., Arnside
²Watson, S.F. Hillmartin Coll., Busby Place, N.W.

²Evans, E.J. Littleton H., Knowle
²Hepworth, C. Commercial S., Stretford
²Herbert, G.C. Pupil Teacher Centre, Ilkeston
²Brown, G. Brunt's Tech. S., Mansfield

²Green, B.J. Lancaster Coll., West Norwood
²Whitelam, H.C. Gram. S., Scarboro

²Carless, H.A. St. Catherine's Coll., Richmond
²Orpwood, H.J. Cliftonville Coll., Margate

²Bragg, R.R. Bradley High S., Newton Abbot
²Carey, A.S. The Gables, Southampton
²Frith, W.H. Rose Hill High S., Bowdon

²Burdge, J.S. *a.* Bell's Gram. S., Coleford
²Cooper, W.E. Queen Elizabeth's Gram. S, Ashburne
²Easlea, F. Raleigh Coll., Brixton
²Snell, E.N. Alexander H., Broadstairs
²Whillock, G.E.B. Elmfield Coll., York

²Furber, W.S. Whitehurch Gram. S.
²Moore, H. Hatfield Coll., Doncaster

²Foster, N.F. Loughton School
²Tinsley, H. Queensberry S., Longton
²Walsh, M. Skerry's Coll., Liverpool

²Amos, T. Commercial S., Stretford
²McCubbin, J. Catford Coll. S., Lewisham
²Seward, F.D. *d.* Bourne Coll., Quinton

Aitkens, C.A.C. *s.d.* Eversley S., Southwold
Birkett, A.M. *s.e.al.* Sandyford Rd. S., Newcastle-on-Tyne
Blake, J.S. *f.d.* Strathmore H., St. Mary's, Jersey
Cookson, C.F. *e.a.* Wellington Coll., Salop
Cowlin, J.W. *g.* St. Mary's Coll., Harlow
Cullimore, B.H. *e.* Gram. S., Ongar
Edwards, C.J. Modern S., Gravesend
²Herbert, R. Kersal S., Kersal Moor, Manchester
Hislop, D.G. *a.* Gram. S., Shoreham
Huelin, J. Jersey Modern S., St. Helier
McClay, M. *a.* Oakes Inst., Walton, L'pool
Mutch, E.W. *a.al.d.* Gram. S., Welshpool
Nobes, H.J. *d.* Walsall Comm. Coll.
²Oliver, J.H. Alton H., Blackheath
Robson, H. *al.* Sandyford Rd. S., Newcastle-on-Tyne
Robson, T.A. *d.* Sandyford Rd. S., Newcastle-on-Tyne
Semple, W.L. *e.a.al.d.* Highbury Park S., N.
Topping, E. Hutton Gram. S.
²Willcox, G. Academy, Crewe
²Wilson, R.W. High S. for Boys, Croydon
Wright, B.C.S. Elmfield Coll., York

Aston, R.D. Gram. S., Ongar
Benjamin, A.H. Maida Vale S., W.
Bennett, B.J. *e.a.* The College, Weston-super-Mare
Buckle, F. *a.* Eton H., Southend-on-Sea
Burrows, H. *bk.* Brunswick H., Maidstone
²Caiger, A.C. Blue Coat Boys' S., Hereford
²Cordingley, C.H. Kendrick Boys' S., Reading
Cove, S.H., *bk.* Gram. S., Ongar
Curtis, W.D. Elmhurst S., Kingston-on-Thames
Evans, W.H. *e.* Beaconsfield H., Brighton
Greengrass, W.E. St. Mary's Coll., Harlow
Jestico, V.J. *a.* Gram. S., Welshpool
²Lamputt, H.G. Private tuition
Macleod, J.D. *e.f.l.* Colchester H., Clifton
Millard, H.A. *e.d.* High S., Hornsey Rise
²Milner, L. Hutton Gram. S.
Preece, G. *a.al.* Gram. S., Welshpool
Rogers, H.N. All Saints' Choir S., Brighton
Russell, T.D. Kendrick Boys' S., Reading
²Warren, H.C. Collett H., Bournemouth
Webster, C. *d.* Claughton Coll. S., Birkenhead

Atkinson, J. *a.d.* Grosvenor Coll., Carlisle
²Billsborough, W. Hutton Gram. S.
Brock, F. *d.* St. Boniface's Coll., Plymouth
Bune, W.A. *e.* The Palace S., Bewdley
²Cabot, H.C. St. James's Coll. S., St. Helier
Creese, T.O. *s.* Hanley Castle Gram. S.
²Davis, T.W. High S. for Boys, Croydon
Day, J.G. *d.* Jersey Modern S., St. Helier
Haigh, C.S. Aylwin Coll., Arnside
Hughes, W.D. Gram. S., Welshpool
²Joslen, W.V. Gram. S., Shoreham
Larkam, W.H. *d.* York H., Reading
Little, F. Wadham S., Liskeard
Loynes, H.E. *e.* King Edward VI. Middle S., Norwich

BOYS, 3RD CLASS, PASS—*Continued.*

²Mollart, T. *d.* Queensberry S., Longton
Monk, C.F. *bk.* St. George's Coll., Wimbledon
Moss, G.J. *a.* Loughton School
Nunn, J.H. *al.* King Edward VI. Middle S., Norwich
Payne, W.G. *a.* Trafalgar H., Winchester
Rook, B.H. *al.* Froebel H., Devonport
Scott, J.L. *d.* Victoria Park S., M'chester
Smallwood, R.W. *a.d.* Oakes Inst., Walton, L'pool
²Spring, F.J. Elmhurst S., Kingston-on-Thames
Webb, A.H.E. *s.e.* The Chandos Gram. S., Winchcombe
Webber, C.D. *a.* Collegiate S., Bridgwater
²Wright, P. Brunswick H., Maidstone

²Aston, T.F. Bell's Gram. S., Coleford
Barter, C.F. *a.al.* Richmond Hill School
Beard, A.E. *s.d.* High S., Hornsey Rise
²Bessant, W.G. Ryde H., Ripley, Woking
Botting, D.E.F. *d.* Gram. S., Wallington
Chennells, S. St. Mary's Coll., Harlow
Childs, C.B. *e.* Pierremont Coll., Broadstairs
Dalton, R.G.F. *d.* Licensed Victuallers' S., Lambeth
Ellett, J.W. *al.* Jersey Modern S., St. Helier
²Haskard, E.W. Elmfield Coll., York
Hills, F.W. *a.* St. Leonards Coll. S.
Massey, P.E. Gram. S. Wilmslow
Other, W.B. Ashford H., Birkenhead
²Percy, A.F. The School, Wellington Rd., Taunton
Reed, E.J. Uxbridge Preparatory S.
Skinner, H.W. Pierremont Coll., Broadstairs
²Sproston, E. Mossley Hall S., Congleton
²Steytler, H.A. Melbourne Coll., Auerley
Williamson, J.H. *d.* Barton S., Wisbech
²Wrightson, R. The Preston Gram. S., Stokesley

²Berriman, H.B. Gram. S., Hayle
Biou, K.N. *d.* Taunton School
²Boston, A.S. Blundell's S., Tiverton
Catnach, W. *a.al.* Sandyford Rd. S., Newcastle-on-Tyne
Clewer, D. Taunton H., Brighton
²Dann, A.M. Elmfield Coll., York
Dickson, A. Gram S., Shoreham
Elmer, L.W. *e.* King Edward VI. Middle S., Norwich
Glasse, T. *a.* Loughton School
²Houldcroft, E.M.A. The Gables, Southampton
Ivison, E.S. St. George's Coll., Wimbledon
Jasper, V. *a.al.* Gram. S., Wallington
²Newth, F.D. High S. for Boys, Croydon
Ogden, J.M. Elmfield Coll., York
Pickett, J.S. High S., Brentwood
Piper, C.J.H. *a.al.* Gram. S., Wallington
Spink, S.C. *e.* Taunton H., Brighton
Tinn, H. Sandyford Rd. S., Newcastle-on-Tyne
Towler, L. *d.* Gram. S., Chorlton-cum-Hardy
Williams, R.A. *a.* Uxbridge Preparatory S.

Baden, R. *a.d.* Gunnersbury S., Chiswick
Bartholomew, J.C. Colebrook H., Bognor
Candish, E.J. *bk.d.* St. Winifred's S., Torquay
Clark, E.G. King Edward VI. Middle S., Norwich
Coleman, H. Orchard Gardens S., Teignmouth
Cornish, F. Wellington Coll., Salop
Doherty, J. The Palace S., Bewdley
Dunnet, A.M. Cliftonville Coll., Margate
²Filleul, H.P. Jersey Modern S., St. Helier
²Gibsone, H. High S. for Boys, Croydon
²Gunner, W.H. Elmside S., Red Hill
Kirsopp, W.H. Manor H., Clapham Common
Longman, A.H. *a.d.* Taunton School
²Mayman, B.R. Private tuition
²Morgan, N.F. Castle Hill S., W. Ealing
Parsons, C. *d.* Reading Coll. S.
²Patterson, K. Canning St. Council S., Benwell
Payne, G.V. *e.* Bracknell College
Pearce, A.C. *e.* King Edward VI. Middle S., Norwich
Robson, W.L. *a.al.* Westmorland Rd. S., Newcastle-on-T.
Sargent, P.T. Modern S., Gravesend
Sayers, C.R. Egham High S. for Boys
Webb, W. Towcester Gram. S.
Welton, F.E. Modern Coll., Harrogate
Windred, C.A. *f.d.* St. Bede's S., Hove

Armstrong, A.R. Paddington High S.
Austin, J.H. *h.a.* Gram. S., Chorlton-cum-Hardy
²Barnes, S. Oakes Inst., Walton, L'pool
Blaylock, C.E. Westmorland Road S., Newcastle-on-T.
²Catternole, F.C. Bungay Gram. S.
Cheun, The Ferns, Thatcham
Fitzsimmons, P. St. Boniface's Coll., Plymouth
Gale, T.M. St. George's Coll., Wimbledon
Godwin, E.W. *s.* The College, Clevedon
Henderson, J.L. *e.d.* Oakes Inst., Walton, L'pool
Herbert, R.A. *e.* Argyle H., Sunderland
Kilvington, E. *a.* Elmfield Coll., York
Marshall, L.P. Taunton School
Oxley, R. Castle Hill S., W. Ealing
Pratt, H.B. Gram. S., Shoreham
²Slack, W.R. Scorton Gram. S.
Turner, J.H. *e.a.d.* Gram. S., Ongar
Whaley, J.W. *d.* Scarborough College

²Allwright, R.A.J. Kendrick Boys' S., Reading
²Atkin, M. High S. & Comm. Coll., Forest Gate
²Bush, D. *ch.* Hutton Gram. S.
Cade, G.W. Gram. S., Ongar
Chadwick, A. *e.* Victoria Park S., M'chester
Dabbs, R.H. *e.d.* Gram. S., Wallington
Dawes, P.T. St. John's Coll., Brixton
Dilly, H. *d.* Canning St. Council S., Benwell
Finn, F.J. *d.* Sandwich School
²Gowen, F.C. King Edward VI. Middle S., Norwich
Grimes, S.S. *s.* Bracknell College
Heatley, G. Canning St. Council S., Benwell
Hodgson, H.S. *a.* Aylwin Coll., Arnside
Jackson, S.H. *e.g.* St. John's Coll., Brixton
LeCouillard, F.G. *s.* Jersey Modern S., St. Helier
Parkes, H.P. High S. for Boys, Sutton
Perodean, E.D. Richmond Hill School
Ries, H.F. *g.a.* Oakes Inst., Walton, L'pool
Saunders, H.J. Taunton School
Selous, G. Oxenford H. St. Lawrence, Jersey
Thimbleby, A.T.L.L. Hove High S.
Westworth, E.W. *a.* Hutton Gram. S.
Williams, R. Wadham S., Liskeard
Williamson, H.W. Kibworth Gram. S.

Baylis, J.C. *d.* Gram. S., Ongar
Breadmore, R.G. Trafalgar H., Winchester
Clarke, J.E. *a.* Kendrick Boys' S., Reading
Faulkner, R.O. *e.* Gram. S., Shoreham
Griffin, H. Bourne Coll., Quinton
²Hail, A.W. *bk.* Private tuition
Hall, A.L. Steyne S., Worthing
Harding, T.O. Mossley Hall S., Congleton
Harrison, G.C. Cambridge H., Camden Rd., N.
Harrison, N.M. Scarborough College
Haward, G. Sandwich School
Hinwood, G.Y. *s.e.d.* The College, Clevedon
Jacks, F.I. Alexander House, Broadstairs
Jackson, N.H. *a.* Oakes Inst., Walton, L'pool
Le Masurier, C.G. *f.* Parochial S., St. Clements, Jersey
Newman, W.A. High S., Brentwood
Schofield, A. Gunnersbury S., Chiswick
Sims, J. *a.al.* York Manor S.
Stephenson, C. *s.* Bailey S., Durham
²Stockbudge, P.J. Gram. S., Redditch
²Tuelon, C.M. High S. for Boys, Croydon
²Warren, L.C. Gram. S., Friern Barnet
Whitaker, R.F. *e.* Claughton Coll. S., Birkenhead
White, W. *d.* Westmorland Rd. S., Newcastle-on-T.

Anstee, N.V. *s.d.* The College, Clevedon
Butler, B.P. Brunswick H., Maidstone
Cole, R. King Edward VI. Middle S., Norwich
Crisp, C.H. Drax Gram. S.
Cumberbirch, F. Clifton Coll., Harrogate
Denize, F.A. *al.* Jersey Modern S., St. Helier
Garrick, J.A. *f.* Argyle H., Sunderland
²Gilbert, J. Arnold Coll., Swansea
Hewitt, E. *s.d.* Margate Comm. S.
Howcroft, R. *a.d.* Hutton Gram. S.
Jellis, G. Hanley Castle Gram. S.
²Johnson, H.T. Belton H., Eastcliff, Broadstairs
Lake, A.R. Mossley Hall S., Congleton
Neve, A.B. *al.* Westmorland Rd. S., Newcastle-on-T.
Odam, C.L. Taunton School
Pascoe, C. Licensed Victuallers' S., Lambeth
Plumb, A. *e.* Preston Classical, Mathematical, and Comm. S.
Selby, E.W. *d.* Oakdene, Worsley
Simpson, S.E.M. *d.* Mossley Hall S., Congleton
Skinner, R.H. *e.* Pierremont Coll., Broadstairs
Steele, H.R. *d.* High S. for Boys, Croydon
Stone, R.F. *e.d.* Wellington Coll., Salop
Stubings, A.J. *d.* King Edward VI. Middle S., Norwich
Wagner, H. *e.d.* High S. for Boys, Croydon

²Aplin, F.G. Westbourne H., Cowes
²Armstrong, J.E. Winchester H., Bristol
²Baines, A.C. King's S., Worcester
Berg, B. Argyle H., Sunderland
Biel, W.D. Taunton School
Biscombe, W. *e.* Highfield S., Chertsey
²Blanshard, G. Drax Gram. S.
Brown, W.H. The College, Weston-s.-Mare
²Collis, H.H. King Edward VI. Middle S., Norwich
Craven, H.D. *d.* Wellington Coll., Salop
²Dibblin, G.H. London Coll. for Choristers, Paddington
Dix, E.M. Gram. S., Shoreham
Fisher, C.A. *bk.* High S., Romford
²Grace, B.F. Broomy Hill Acad., Hereford
²Gray, D.H. Jersey Modern S., St. Helier
Green, J. Gram. S., Ongar
²Greenough, E.E. Atherstone Gram. S.
Herkes, R. Sandyford Rd. S., Newcastle-on-Tyne
Houghton, C. High S., Brentwood
²Hyne, L.J. Oxenford H., St. Lawrence, Jersey
Jones, F.S. *a.* Bell's Gram. S., Coleford
Lane, H.E. *a.* Kingsholme S., Weston-super-Mare
Maggs, S. *e.* Taunton School
Moore, A.J. St. John's Coll., Brixton
²Newbery, J. St. Leonards Coll. S.
Oakley, W.L. Gram. S., Redditch
²Owen, G.L. Aylwin Coll., Arnside
Pearse, E. *e.* Kendrick Boys' S., Reading
Powell, H.W. Licensed Victuallers' S., Lambeth
Smithies, J. The Hermitage S., Grimsargh
²Stirling, C. Norman H., W. Didsbury
Sully, R.A. Gunnersbury S., Chiswick
²Webb, C.E. South Molton United S.
Woodward, J.H. *a.* Oakes Inst., Walton, L'pool

²Brett, A. Brunswick H., Maidstone
²Burrell, C.H.G.P. St. Catherine's Coll., Richmond
Chamberlain, F.G.W. *d.* Collett H., Bournemouth
Corfield, H.R. Private tuition
Crabtree, W.S. *d.* King Edward VI. Middle S., Norwich
Davis, R.C. *al.* Gunnersbury S., Chiswick
Freeth, L.G. *a.* Charlecote S., Worthing
²Garrood, H.J. King Edward VI. Middle S., Norwich
Godrich, J.E.N. *a.* The Palace S., Bewdley
Hutt, E.S. *e.a.d.* Kingsholme S., Weston-super-Mare
Jennison, N.L. Wellington Coll., Salop
Jones, W.H. St. Mary's Coll., Harlow
Killingback, H.C. Gram. S., Ongar
Leech, H. *e.* Tynemouth School
Middle, G.F. Oakes Inst., Walton, L'pool
²Parrish, H. The Preston Gram. S., Stokesley
Roberts, A.L. *d.* Hanley Castle Gram. S.
Rymer, R. *a.* Hutton Gram. S.
Sheppard, A.G. *a.* Kendrick Boys' S., Reading
Snowball, S. Argyle H., Sunderland
Speeding, R.J. *al.* High S. for Boys, Croydon
Tapson, C.E.T. Gram. S., Wallington
²Woodcock, H.C. Bourne Coll., Quinton

Aitken, F.W.P. Modern Coll., Harrogate
Carruthers, R. *e.* Penketh School
Cockram, S.W.S. *a.* Froebel H., Devonport
Coggill, H. *d.* Modern Coll., Harrogate
Davies, D.W. *a.* Oakes Inst., Walton, L'pool
Dicks, P.J. Trafalgar H., Winchester
Dolman, R. *a.* The Palace S., Bewdley
Druce, C.G. *d.* Bourne Coll., Quinton
Ferrington, H. *d.* Bourne Coll., Quinton
²Fisher, T.R. Licensed Victuallers' S., Lambeth
²Fletcher, T.W. *d.* The College, Clevedon
Gentle, F.S. Taunton H., Brighton
Hoggins, T.E. *e.a.d.* Wellington Coll., Salop
Hutchinson, W.E. *s.* Eversley S., Southwold
Keller, N.G. *d.* Elmhurst S., Kingston-on-Thames
²Kendall, R. St. Leonards Coll. S.
Lack, R.L. *e.* Trafalgar H., Winchester
²Lindeman, E.H. London Coll. for Choristers, Paddington
Parker, E. Eversley S., Stamford
Pickles, R. Aylwin Coll., Arnside
Pinnock, H. *e.a.d.* Taunton School
Punt, H. Oakes Inst., Walton, L'pool
Meakes, A.M. Oxenford H., St. Lawrence, Jersey
²Robb, W.A. Barton S., Wisbech
Roddy, S. *al.* St. Mary's Coll., Harlow
Sangster, F. Towcester Gram. S.
Stansby, E.F. *a.* Gram. S., Ongar
Swift, E.A. Scarborough College
Swift, J. Oakes Inst., Walton, L'pool
Syvret, A.J. Harleston H., St. Lawrence, Jersey
²Waldron, C.J. Gram. S., Friern Barnet
Whitting, E.J. *d.* The College, Weston-super-Mare

Blackford, A.J. *s.* The College, Clevedon
²Crawford, G.H. Gram. S., Shoreham
Daglish, H.P. Sandyford Rd. S., Newcastle-on-Tyne
Dore, T. Blue Coat Boys' S., Hereford
²Gill, C.H. Commercial S., Stretford
Graham, C. *al.* Tynemouth School
²Hudson, A.G. Rose Hill High S., Bowdon
Jarvis, J.M. Wellington Coll., Salop
Knee, M.V. *d.* The College, Clevedon
Lakeman, A.L. *f.* Uxbridge Preparatory S.
Loynes, W.C. Wellington Coll., Salop
Mason, J.E. *e.* Kendrick Boys' S., Reading
Muirhead, F.C. Jersey Modern S., St. Helier
Ninham, C.H. Bracondale S., Norwich
Parsons, E.R. Boys' High S., Wareham
Pascoe, A.J. Licensed Victuallers' S., Lambeth
Phipps, C.A. Gram. S. Ongar
²Priestley, S. High S. & Comm. Coll., Forest Gate
Raeburn, F.C. Oxenford H., St. Lawrence, Jersey
Smithies, R.B. *d.* Brean H., Weston-super-Mare
Taylor, I. Hutton Gram. S.
Urmston, F. *f.* Wellington Coll., Salop
Wadia, M.M. Gram. S., Shoreham

Banister, R. *a.* Hutton Gram. S.
Beere, A.C. *e.* Elton High S., Bristol
Bootes, A.N. *d.* Westmorland Road S., Newcastle-on-T.
Chesterman, C.C. *e.* Grosvenor S., Bath
Dale, S.J. *s.* Tynemouth S.
Flint, F.J. Drax Gram. S.
Hill, H.W. *d.* Cliftonville Coll., Margate
Johnson, G.L. Boys' High S., Wareham
McKinney, A.T. *a.* Oakes Inst., Walton, L'pool
Mogerley, F.G. Grosvenor Coll., Carlisle
Munn, C.F. Arlington Villa S., Brighton
Pickering, J.H. Woodroughs S., Moseley
Pirouet, A.F. *f.* Parochial S., St. Clement's, Jersey
²Poulton, H.M. Bell's Gram. S., Coleford
Pratley, R.J. Gram. S., Ongar
Rideal, A. High S. for Boys, Croydon
Robson, B.S. *al.* Westmorland Rd. S., Newcastle-on-T.
²Smith, G.A. Gram. S., Ongar
Thompson, N.L. Ivel Bury S., Biggleswade
Thurlow, G.R.Y. St. Aubyn's, Woodford Green
Whitaker, H.E. *e.* Claughton Coll. S., Birkenhead
White, I.H. *e.* Taunton School
Whitfield, D.G. Mossley Hall S., Congleton
²Whitley, R.W. Pannal Ash Coll., Harrogate
²Williams, C.N. Mercers' S., Holborn, E.C.

Edenborough, H.M. St. Mary's Coll., Harlow
Evans, I.T.H. *e.al.* Tutorial S., Penarth
Forster, G. Bailey S., Durham
Franklyn, H. *e.* High S., South Shore, Blackpool
Harris, W.D. London Coll. for Choristers, Paddington
Holmes, C.A. Gram. S., East Finchley
Hoyie, F.W. *a.* Oakes Inst., Walton, L'pool
²Lewis, T.M. Gram. S., Shoreham
Matthews, C.H. *d.* Broomy Hill Acad., Hereford
Moore, E.G. *a.* Highbury Park S., N.
Randall, S.T. Gordon H., Broadstairs
Richardson, D.R. Hutton Gram. S.
Selkirk, J. *a.* Oakes Inst., Walton, L'pool
²Shelton, O.W.M. Derby School
Whiteley, E.G. Modern Coll., Harrogate

Brodie, A. *a.al.* Oakes Inst., Walton, L'pool
Carter, A.F. *s.* Gram. S., Devizes
Clarke, J.G. Brunswick H., Maidstone
Clery, A.A. *d.* All Saints Choir S., Brighton
Cook, R.P. St. Leonards Coll. S.
Earle, B.L. *d.* Trafalgar H., Winchester
²Edmonds, P.J. Trafalgar H., Winchester
²Ellis, L. Academy, Crewe
Hillier, R.R. Gunnersbury S., Chiswick
Honer, D.J. *d.* St. Boniface's Coll., Plymouth
²Hopwood, C. Boys' High S., Coalbrookdale
Kanchat Pai, *al.* Arnold H., Chester
Kark, B. Great Ealing S., Ealing, W.
King, F.C. Licensed Victuallers' S., Lambeth
²Mason, W.P. Modern S., Gravesend
Pearson, A.J.S. *d.* Brunswick H., Maidstone
Rhodes, A.H. *d.* Gram. S., Chorlton-cum-Hardy
²Summerskill, J.H. Elmside S., Red Hill
Traise, E. *a.d.* Eversley S., Stamford
Tyler, J.A. Hanley Castle Gram. S.
Winkworth, R.A. Gram. S., Shoreham

Batten, E.C. Ivel Bury S., Biggleswade
Bell, W.F. Eton H., Southend-on-Sea
Bowles, W.S. Jersey Modern S., St. Helier
²Castle, G. Sandwich School
²Cobb, S.J. Elmhurst S., Kingston-on-Thames
²Conway, J. Canning St. Council S., Benwell
Eady, R.H. Jersey Modern S., St. Helier
Garrett, L.A. *d.* High S. for Boys, Croydon
Gough, N. The Palace S., Bewdley
²Greenslade, C. Blundell's S., Tiverton
Hepworth, H.A. Scarborough College
²Montague, J.E. Loughton School
Neill, N.G. Oxenford H., St. Lawrence, Jersey
Orpwood, J.E. *d.* Cliftonville Coll., Margate
Peacock, S.W. Herne Bay College
Ridley, K. Westmorland Rd. S., Newcastle-on-T.
Robertson, W.R. *d.* Bracknell College
Rogers, R.G. High S. for Boys, Croydon
Watson, W.J. High S. & Comm. Coll., Forest Gate

Butler, A.E. *d.* Gram. S., Devizes
Cave, A. Gram. S., Welshpool

BOYS, 3RD CLASS, PASS—*Continued.*

²Cope, C.E. Bell's Gram. S., Coleford
Crosby, J.W. *a.* Endcliffe Coll., Sheffield
De Winton, C. St. Mary's Coll., Harlow
Downes, R. *a.d.* Blue Coat Boys' S., Hereford
Featherstone, A. Canning St. Council S., Benwell
Forster, C.W. Grosvenor Coll., Carlisle
Gate, H.L. *e.* Tynemouth School
Husbands, R.W. Mary St. House, Taunton
Jones, R.R. Canning St. Council S., Benwell
Maitland, C.J. *al.d.* High S. for Boys, Croydon
Manford, R.V. Gram. S., Welshpool
²Michelmore, E. High S. for Boys, Croydon
Mills, T. *d.* Gram. S., Hayle
Moore, T.E.L. Brean H., Weston-super-Mare
Mowan, P. *e.* St. Boniface's Coll., Plymouth
Peace, G.L. *e.* Wellington Coll., Salop
Phelps, H. Hanley Castle Gram. S.
Prismall, J.H. *d.* Trafalgar H., Winchester
²Scarlett, E.S. Mary St. House, Taunton

²Beale, W. Comm. S., Maidstone
Besly, D.J. *e.* Chaloner's S., Braunton
Bickerstaffe, T.S. Hutton Gram. S.
²Bignell, A.T. Winchester H., Bristol
Bissell, M.J. *a.d.* Bourne Coll., Quinton
Dewing, H.A. King Edward VI. Middle S., Norwich
Gough, G.R. Winchester H., Bristol
Hawkins, N.D. St. Winifred's S., Torquay
Head, W.C. *d.* Brunswick H., Maidstone
Hine, A.R. *d.* St. Bede's S., Hove
Le Lievre, C.D. Jersey Modern S., St. Helier
²Linton, A. Oxford H., South Croydon
Millard, A.H. *s.* High S., Hornsey Rise
Millard, H.S. Bickerton H., Birkdale
Price, A. *d.* Hasland H., Penarth
Robinson, R.J. *e.* Holmsdale H., Worthing
²Sharpe, A.V. Private tuition
Shillito, N. *d.* York Manor S.
Tregear, J. Jersey Modern S., St. Helier
Venner, W.F.F. Hove High S.
Ward, M.A. Bickerton H., Birkdale
Wheildon, J.H. *a.* Hanley Castle Gram. S.,
²Wilson, A. Barton S., Wisbech
Wright, T.A. Bracknell College

Art, *a.* Private tuition
Baker, W.W. *d.* Towcester Gram. S.
Clift, R.W. Trafalgar H., Winchester
Collinson, C.H. *d.* Schorne S., Winslow
²De Normann, E.N. Schorne S., Winslow
Driffield, J.H. *e.* Spilsby Gram. S.
Hollyer, A.E. Gram. S., Ongar
Milner, J.F.A.L. *a.* Gram. S., Shorcham
Morris, R.E. *e.* High S. for Boys, Croydon
Pierce, W.C. St. Leonards Coll. S.
Richmond, G.H. St. Mary's Coll., Harlow
²Southcombe, A.R. South Molton United S.
Stanners, A.E. The Palace S., Bewdley
Tarrant, F.N. Bourne Coll., Quinton
²Tomlinson, A. Maidenhead Council S.
²Watson, F. Hutton Gram. S.

Bliss, F. High S., Brentwood
²Bradshaw, C.F. Arlington Park Coll., Chiswick
Carruthers, C.F. *e.* Victoria Park S., Manchester
Crocker, E.J. Brunswick H., Maidstone
Daniel, P. Private tuition
Elkan, J.A.C. Maida Vale S., W.
Flaxman, S.J. Yarmouth College
Fletcher, W.J. Gram. S., Devizes
Haigh, R. Aylwin Coll., Arnside
Hancock, B.S. Mossley Hall S., Congleton
Harden, C.W. Elmhurst S., Kingston-on-Thames
Hearne, A.E. Catford Coll. S., Lewisham
Higgs, R. The Palace S., Bewdley
Jonas, G.J. Private tuition
Knatchbull, R. Oxenford H., St. Lawrence, Jersey
²Lindley, F. Private tuition
Mackay, J.M. Tynemouth School
McDonald, F. *a.* York Manor S.
Myers, A.F. *e.* Wykeham H., W. Hampstead
Page, P. *d.* St. Leonards Coll. S.
Pickup, F.W. Bickerton H., Birkdale
Pocock, E.J. Kendrick Boys' S., Reading
Rant, T.F. King Edward VI. Middle S., Norwich
Shaw, G.S. Wellington Coll., Salop
Slow, D.E. Taunton H., Brighton
Turner, H.E. *d.* Elmhurst S., Kingston-on-Thames
Wadhams, J.H. Kendrick Boys' S., Reading
Widgery, S.J. *d.* South Molton United S.
Wright, J.G. Richmond Hill School

Anstice, B.G. Trafalgar H., Winchester
Arnfield, V. King Edward VI. Middle S., Norwich
Barnes, C.L. Gram. S., Chichester
Bell, H.E. *d.* The Palace S., Bewdley
Brown, S.D. High S. for Boys, Croydon
Cotton, C. *e.* Eversley S., Stamford
Craven, J.M.F. Wellington Coll., Salop
Dark, E.F. *d.* Gunnersbury S., Chiswick
Davenport, E. *d.* Mossley Hall S., Congleton
Durnford, R.J. Gram. S., Devizes
Houillebecq, F.G. *f.* Parochical S., St. Clements, Jersey
²Iley, F. Scorton Gram. S.
Millard, E.C. High S., Hornsey Rise
Missing, C H. Brunswick H., Maidstone
Routledge, R.H. Hearn H., Hampstead
Slater, W. W. Jesmond Council S., Newcastle-on-T.
Sproston, H.A. Mossley Hall S., Congleton
Tiddy, E.W. St. John's Coll., Brixton
²Ward, T.A. Kendrick Boys' S., Reading

²Armstrong, T.F. Grosvenor Coll., Carlisle
²Bailey, P.K. *d.* Manor H., Clapham Common
Boardman, H.W. St. Aubyn's, Woodford Green
Blomfield, T. King Edward VI. Middle S., Norwich
Blumenthal, L. Mission S. for Hebrew Children, Streatham Common
De Sandoral, A. Schorne S., Winslow
²Dickie, F. Springfield Coll., Acton
Drury, P.B. Tynemouth School
Giddins, E.G. *d.* Blenheim H., Fareham
Gray, J.H. *e.* Steyne S., Worthing
²Hamden, F. St. Augustine's Coll., Ashford
Hartridge, N.L. Brunswick H., Maidstone
Hill, R.L. *e.* Scarborough College
Hilton, S. Taunton School
Hopkin, J.M. Modern Coll., Harrogate
²Jeans, J.A. Gram. S., Sale
Jones, V.E. Cambridge H., Camden Rd., N.
Macculloch, J.M. *d.* Grosvenor Coll., Carlisle
Newbery, R.L. *a.d.* South Molton United S.
Newbury, S. *d.* Blenheim H., Fareham
²Norton, F. South Molton United S.
Oliver, F. *a.* Gram. S., Shoreham
Rolston, F.G. Froebel H., Devonport
Schamasch, M.C. *f.* Wykeham H., W. Hampstead
Thompson, G.W. Elton High S., Bristol
Trethewey, L. St. Winifred's S., Torquay
Weingold, A.B. Victoria Park S., M'chester
Wise, O.S. *d.* Ryde H., Ripley, Woking

Abell, B.T. Mossley Hall S., Congleton
Barff, R. York Manor S.
Bland, R.L. *d.* Gunnersbury S., Chiswick
Croscombe, J.F. Christ's Coll., Blackheath
²Davies, D. Old College S., Carmarthen
Fowler, T. Walsall Comm. Coll.
Harland, E. Scarborough Coll.
Harper, J. Lancaster Coll., Morecambe
Hopkins, E.L. Taunton School
Johnson, H. Walsall Comm. Coll.
Long, L. Richmond Hill School
Luscombe, V.C. *a.* Ryde H., Ripley, Woking
Mariner, C. Waterlooville Coll., Cosham
Montague, F. Great Ealing S., Ealing, W.
Peel, J.A. *a.* Trafalgar H., Winchester
Robinson, E. Grosvenor Coll., Carlisle
Shaw, J.S. *d.* Wellington Coll., Salop
Sinclair, F.R. *e.* Ryde H., Ripley, Woking
Spicer, R.W. *a.* Oxford H., South Croydon
Thomas, W.S. *e.l.* Cedar Towers, Tankerton
Wearing, C.M. *e.* Taunton School

Baldwin, J.B. *a.d.* Oakes Inst., Walton, L'pool
Bark, N. Oakes Inst., Walton, L'pool
Berry, P. The Douglas S., Cheltenham
Butterfield, E.R. Ellesmere S., Harrogate
Carter, W.T. Buda Coll., Aldrington, Hove
Chapman, A.H. *e.* Ryde H., Ripley, Woking
Dyson, E.T. *d.* St. Dunstan's Coll., Margate
²Finlay, W.J. Mercers' S., Holborn, E.C.
Gittings, W.J. Christ's Coll., Blackheath
Hawkins, L. *d.* Commercial S., Wood Green, N.
Herve, E.A. St. John's Coll., Green Lanes, N.
Hurst, R.W. *s.* Kibworth Gram. S.
Jenkins, D.M. *a.* Kingsholme S., Weston-s.-Mare
Joule, J.S. High S., Brentwood
Kellow, G.E. Taunton School
McLaine, T.E. *a.* Oakes Inst., Walton, L'pool
Van de Ven, C.W. Trafalgar H., Winchester
Webb, E. Wescott Rd. Council S., Wokingham

Allen, R.G. *a.* Trafalgar H., Winchester
Appelston, D. *s.* Mission S. for Hebrew Children, Streatham Common
Banks, E. Lancaster Coll., Morecombe
²Boston, W.T. King Edward VI. Middle S., Norwich
Brockhill, L.H. St. Leonards Coll. S.
Croxford, A.A. *d.* Paddington High S
Davidson, L F. Castle Hill S., W. Ealing
Harris, H.H.G. Ryde H., Ripley, Woking
Hepburn, E. Eton H, Southend-on-Sea
Hubie, J.E. Drax Gram. S.
James, V.H P. *e.* Bradley High S., Newton Abbot
Johnson, R. Scorton Gram. S.
Lankfer, S.R. Barton S., Wisbech
Nichols, B. *s.* The College, Clevedon
Nichols, C.T. Claughton Coll. S., Birkenhead
Record, J. Kendrick Boys' S., Reading
Smith, W.E. Spilsby Gram. S.
Stevens, D.B. Bracknell College
²Thompson, E. Spilsby Gram. S.
Veitch, W. Brunswick H., Maidstone
²Waters, H. Lancaster Coll., Morecambe
Watson, F. Scarborough College
Watts, C.P. St. George's Coll., Wimbledon

Addenbrooke, E.C. Taunton School
Barlow, A. Drax Gram. S.
Betchetti, F.X. The Haughton S., York
Bonney, H. *a.d.* Catholic Gram. S., St. Helens
²Cardew, W. de M. London Coll. for Choristers, Paddington
Cookson, O.E. *a.d.* Wellington Coll., Salop
Counsell, R.J. Hutton Gram. S.
²Emmens, R.R. Bourne Coll., Quinton
Filmer, A.D. Comm. S., Maidstone
Ford, F.W. Kendrick Boys' S., Reading
Full, G.S. Froebel H., Devonport
²Grainger, J. Private tuition
Heine, J. Norman H., W. Didsbury
Jones, C.V. Mossley Hall S., Congleton
Levett, H.L. *d.* Taunton School
Lupton, W.S. *e.* Kingsholme S., Weston-super-Mare
Massey, C. St. Boniface's Coll., Plymouth
Moses, F.S. *f.* Wykeham H., W. Hampstead
²Salmon, C.G. Mary St. House, Taunton
Taylor, W.C. Brunswick H., Maidstone
Walker, T.R. Claughton Coll. S., Birkenhead
Waller, J.B. Clifton Coll., North Shore, Blackpool
Wilks, H.M. Gram. S., St. Anne's-on-Sea

Bailey, E. Gram. S., East Finchley
Baker, R. Reading Coll. S.
Barnett, E.O. Castle Hill S., W. Ealing
Berriman, G. Woolston Coll., Southampton
Bulstrode, C.L. Blenheim H., Fareham
Cobb, L.L. Cedar Towers, Tankerton
Dunnett, B.E. Sabam Coll., Watton
²Fazan, B., Beverley S., Barnes
Fraser, H.D.M. St. Helen's Coll., Southsea
²Gardner, W.P. Oakes Inst., Walton, L'pool
Godfrey, A.J. Licensed Victuallers' S., Lambeth
Hall, A.E. *d.* Belton H., Eastcliff, Broadstairs
Hamilton, T.C. *a.* Tynemouth School
Hewer, J.A.L.W. *s.* Avenue S., Bedford
Heyman, W.F. *d.* Taunton School
Jeffreys, E.W. Kingsholme S., Weston-super-Mare
Jones, G.V. Hillmartin Coll., Busby Place, N.W.
Kent, A. Reading Coll. S.
Leader, A.E. Gram. S., Devizes
Marr, C.B. High S. for Boys, Croydon
Marshall, J. Gram. S., Wilmslow
Polhil, H.L. *d.* Ion H., East Molesey
Sherwood, C.E.W. *a.* Taunton School
²Stembridge, N.St.J. Bourne Coll., Quinton
Stockbridge, W.B. Grosvenor Coll., Carlisle
²Templeman, F.J. Wilton H., Exeter
Wildsmith, B. *d.* Rostrevor H., Folkestone

Charlton, W.J. Canning St. Council S., Benwell
Charity, S. High S. for Boys, Croydon
²Clarke, M. South Molton United S.
Cochrane, D.W. St. John's Coll., Brixton
Coulson, J.A. The Preston Gram. S., Stokesley
Drake, D.H. Ellesmere S., Harrogate
²Du Heaume, C.P. Jersey Modern S., St. Helier
Durrant, T. Ryde H., Ripley, Woking
Hargreaves, H.K. Rusholme High S., Manchester
Latham, R. Wellington Coll., Salop
²Miller, H.C. Oxford H., South Croydon
Monk, B. Gram. S., Shoreham
Moor, A.P. *a.d.* South Molton United S.
Nichol, J. Grosvenor Coll., Carlisle
Norman, D.E. Highfield S., Chertsey
²Parks, I. High S. for Boys, Croydon
Roberts, M. *s.* Margate Comm. S.
Sanders, G. *e.* Willow House Coll., Walsall
Schneider, A. Great Ealing S., Ealing, W.
Victor, M.W. Mission S. for Hebrew Children, Streatham Common

Anahory, A. *s.* Maida Vale S., W.
²Armstrong, E.F. Gram. S., Sale
Collier, J.E. The College, Clevedon
Couch, A.J. Brunswick H., Maidstone
²Crocker, C.J. Trafalgar H., Winchester
Goodbody, S.R. Brunswick H., Maidstone
²Greenfield, W.G.H. Licensed Victuallers' S., Lambeth
Hammond, C.A. *d.* Sandwich School
²Hughes, A.T. Scorton Gram. S.
John, C.C. Kingsholme S., Weston-super-Mare
King, C.W. The Palace S., Bewdley
Leadbeater, H. *d.* Gram. S., Scarboro'
Reynolds, R.S. Oakes Inst., Walton, L'pool
Rice, A.E. *f.d.* Gram. S., Shoreham
Rodgers, D.G. St. Mary's Coll., Harlow
Seward, J.R. Alexander House, Broadstairs
Tolley, C. The College, Weston-super-Mare
Webb, A.J. Bell's Gram. S., Coleford
Womersley, V. St. Leonards Coll. S.

Brown, A.R. Southampton Boys' Coll.
Caton, C.T. Oakes Inst., Walton, L'pool
Clarke, E. Barton S., Wisbech
Collen, F.D. Christ's Coll., Blackheath
Crisford, F.L. St. Leonards Coll. S.
Davey, N.H. *a.* Ellesmere S., Harrogate
Heslop, J. Elmfield Coll., York
Howard, R. Cambridge H., Camden Rd., N.
Mansfield, C. The College, Weston-super-Mare
Smith, O.T. *d.* Oakdene, Worsley
Stanley, D. Ion H., East Molesey
²Thain, H.W. Highfield S., Chertsey
Todd, F.J. Elmfield Coll., York
²Willan, L.S.F. Scarborough College
Wood, W.B. *e.* Taunton School

Barker, E. Drax Gram. S.
Collier, F.H.D. *a.* Boys' High S., Erdington
Counter, F. Beverley S., Barnes
²Hannon, T. Private tuition
Happe, H. Springfield Coll., Acton
Hecker, J.H. Gram. S. Ongar
Herbert, C.W. Taunton School
Le Jeune, H.J. Jersey Modern S., St. Helier
Lewis, L.O. Clifford S., Beckington, Bath
McLeod, R.M. St. Mary's Coll., Harlow
Morgan, V.R. Wellington Coll., Salop
Mott, F.T.J. Caversham H., Reading
Percival, J.W. Athelstan, Broadstairs
²Poden, A.E. Portland Coll., Chiswick
Salt, A.C.J. *d.* Taunton School
Stuckey, F.W.G. The College, Clevedon
²Trussell, E.L. Bourne Coll., Quinton
Walter, D.A. Steyne S., Worthing
²Whiting, R.H. Private tuition

Barr, W. Ashford H., Birkenhead
²Beagley, L.F. Modern S., Woking
²Bevan, E.V. High S. for Boys, Croydon
Bradley, W. Elmfield Coll., York
Cannon, L.E. The Western Coll., Harrogate
Comben, H. *d.* High S., Market Drayton
²Duff, R.D. Manor H., Clapham Common
Hutson, S.H. Barton S., Wisbech
Peters, N.V. Hove High S.
Price, H., *s.* Margate Comm. S.
Reeve, A.J. Rusholm High S., M'chester
Sherman, T.C. Ryde H., Ripley, Woking
Smith, P. Lancaster Coll., Morecambe
Snow, T.V. Boys' High S., Wareham
²Story, T. Grosvenor Coll., Carlisle
Thomas, J.S. Kingsholme S., Weston-super-Mare
Trippe, S.H. Southampton Boys' Coll.
Wilson, R.L. *d.* Grosvenor Coll., Carlisle

²Brooks, W.V. High S., Hornsey Rise
Buchan, P.E. Froebel H., Devonport
Bumpus, H.E. Crompton S., Southend-on-Sea
Dance, D. Cliftonville Coll., Margate
Davidson, R.C. Tynemouth School
Deudeney, B.Y. Taunton H., Brighton
Duncan, F.B. Oakes Inst., Walton, L'pool
Farley, J.E.W. Bradley High S., Newton Abbot
Field, P.C. *s.* High S., Hornsey Rise
Fletcher, J.E. Lancaster Coll., Morecambe
²Jolly, H. Gram. S., Blackpool
Lightowlers, H.S. The School, Wellington Rd., Taunton
Lippiatt, E.T. *d.* Clifford S., Beckington, Bath
Mullock, G. Oakes Inst., Walton, L'pool
Olde, J.E. Taunton School
²Page, C.W. High S. for Boys, Croydon
Polsue, J.R. Modern S., Gravesend
Purdue, P. Gram. S., Shorcham
²Scott, C.H. Southampton Boys' Coll.
Smith, E.W. Reading Coll. S.
²Tremlett, L.J. Private tuition
Vallis, E.W. Clifford S., Beckington, Bath
Vincent, D.H. High S. for Boys, Croydon
Weeks, R. Kendrick Boys' S., Reading
²Wilson, W.F.P. St. Catherine's Coll., Richmond

Bold, T.A. *s.* Gram. S., Clapham
Bradshaw, R.J. Arlington Park Coll., Chiswick
Chapman, A.H. Richmond Hill S.
Chappell, H.R. Finsbury Park Coll., N.
Cookson, C.H. Hutton Gram. S.
Daniel, J. Gram. S., St. Ives
Hartley, P.E. High S., Kirkby Stephen
Lloyd, F.E.C. Highfield S., Chertsey
Loescher, H.E. Leigh Hall Coll., Leigh-on-Sea
Mace, F.H. Bracondale S., Norwich
Mylrea, F. Gram. S., Sale
Naunton, F.A. Yarmouth College
Pitchford, W.C. *d.* Wellington Coll., Salop
Roberts, V.B. Gram. S., Friern Barnet
Robinson, A.L. Gram. S., Wallington
Wadkinson, F.R. Brunswick H., Maidstone

²Berrington-Stoner, H. Steyning Gram. S.
Child, F. Lancaster Coll., Morecambe
Clark, J.H. The College, Weston-super-Mare
Colley, T. Fulwood Gram. S., Preston
Gore-Jones, S.F. High S. for Boys, Croydon

BOYS, 3RD CLASS, PASS—*Continued.*

Harston, G.N.B. Ellesmere S., Harrogate
²Harvey, A.F. Alexander House, Broadstairs
Hewitt, E.M. *d.* Licensed Victuallers' S., Lambeth
Hodgson, G.P. The Haughton S., York
Howlett, C.S. King Edward VI. Middle S., Norwich
Kent, E.G. High S., Romford
²Nickson, S. Bourne Coll., Quinton
Pitchford, C.E. Gram. S., Shoreham
Rippon, H.C. Mossley Hall S., Congleton
Roberts, W.E. *d.* Comm. S. Weymouth
Schwartz, B. Mission S. for Hebrew Children, Streatham Common
Spink, W.H. St. John's Coll., Brixton
²Sugden, G.C. Drax Gram. S.
Trigg, J.G. *d.* Blenheim H., Fareham
Wale, A.L. Cambridge H., Cliftonville, Margate
West, W. The Preston Gram. S., Stokesley
²Young, R.N. Kendrick Boys' S., Reading

Compton, J.S. Gram. S., Shoreham
Downey, A. Canning St. Council S., Benwell
Glanfield, C.G. St. Winifred's S., Torquay
Malden, C.F. Hove High S.
²Mott, J.C. Ryde H., Ripley, Woking
Nathan, G. Hillmartin Coll., Busby Place, N.W.
Rose, A.C. Hanley Castle Gram S.
Sharp, G. *a.* The Palace S., Bewdley
Smith, G.E. Hove High S.

Dicker, W.C. Bradley High S., Newton Abbot
Doswell, E.V. Trafalgar H., Winchester
Edgar, L. Sandwich School
Everett, L.E. Chislon H., Ramsey
²Gould, M.P. High S. for Boys, Croydon
Jenner, E.W. Brunswick H., Maidstone
Lambshead, J. Bradley High S., Newton Abbot
Lawson, W. *d.* Oakes Inst., Walton, L'pool
Mawson, J. Gram. S., Chorlton-cum-Hardy
Milroy, D. Oakes Inst., Walton, L'pool
Oldham, E.C. St. James's Coll. S., St. Helier
Smith, H. Springfield Coll., Acton
White, J.A. St. John's Coll., Brixton

Boyd, C.J. Grosvenor Coll., Carlisle
Brown, C. The College, Weston-s.-Mare
Cothill, W.T.H. Boys' High S., Wareham
²Cowell, C.H.G. Arnold H. with Waterloo Coll., N'hampton
Crump, A.H. *e.* The Palace S., Bewdley
Drew, A.G. Manor H., Clapham Common
Durnford, H.C. Gram. S., Devizes
Forster, A. Grosvenor Coll., Carlisle
Gammon, W.A. Ryde H., Ripley, Woking
Ganner, R.A. Bourne Coll., Quinton
Gaunt, H.G. Gram. S., Shoreham
²Hammond, W.R. Eton H., Southend-on-Sea
Higson, A.W. The Briary, Northwood
Horner, C.W. Blenheim H., Fareham
Hunter, C.J. Catholic Gram. S., St. Helens
Luce, W. Oxenford H., St. Lawrence, Jersey
Monerieff, H.A. Anerley College
²Reading, H.V. Licensed Victuallers' S., Lambeth
Richards, A.H. *a.* Wellington Coll., Salop
Russell, S.G. Brunswick H., Maidstone
Sandys, W.E. *d.* Grosvenor S., Bath
²Worth, H.F. Licensed Victuallers' S., Lambeth

Atkinson, H. Scorton Gram. S.
Bean, L. High S. for Boys, Croydon
Brown, R.H. Ryde H., Ripley, Woking
Coleman, E.L. Sandwich School
Couch, E.H. *d.* South Molton United S.
Dodds, S.W. Tynemouth School
Dyer, W.E. The College, Clevedon
Easterbrook, G.F. St. Winifred's S., Torquay
²Edwards, J.H.L. Manor H., Clapham Common
Glendining, P.N. High S., Romford
²Goddard, A.J.H. Schorne S., Winslow
Goodchild, G. King Edward VI. Middle S., Norwich
Harper, J. *a.* High S., Kirkby Stephen
Hartnell-Sinclair, L. High S. for Boys, Croydon
²Lacey, H.C. London Coll. for Choristers, Paddington
Maiden, A. *d.* Hutton Gram. S.
Park, G. Tynemouth School
Pearce, O.G. Private tuition
Peters, J. Hutton Gram. S.
Sutcliffe, E.H. Ellesmere S., Harrogate
Toft, H. Lancaster Coll., Morecambe
Winship, H. Bailey S., Durham

Bate, R. Beverley S., Barnes
Boulton, W. Mossley Hall S., Congleton
Brighton, F.C. The College, Weston-super-Mare
Campbell, W.M. Brighton H., Bristol
²Chapman, B.W. Gram. S., Scarboro
Davis, L. Elton High S., Bristol
Friday, K. Castle Hill S., W. Ealing
Mallet, A. *f.* St. James's Coll. S., St. Helier
Masters, A.H. Brean H., Weston-super-Mare
Morgan, H. Collegiate S., Bridgwater
Phillips, F.N. High S. for Boys, Croydon
Roberts, H.S. *d.* Hanley Castle Gram. S.
Symonds, K.C. Wellington Coll., Salop
Watkins, C.W. *d.* Brunswick H., Maidstone
Williams, F.A. St. Mary's Coll., Harlow

Barrett, A. *a.* Lancaster Coll., Morecambe
Etches, A. Gram. S., Scarborough
Heaton, W. 21 Avenham Lane, Preston
Kirk, G.S. Bourne Coll., Quinton
Menzies, J. McK. *d.* Aylwin Coll., Arnside
Nightingale, W.H.P. Bradley High S., Newton Abbot
Pêche, N. Gram. S., Blackpool
Robinson, G. Wellington Coll., Salop
Sedgwick, R.C. Gunnersbury S., Chiswick
Smith, A.S. Taunton School
Stretton, G.E. The Douglas S., Cheltenham
Taylor, H. Bradley High S., Newton Abbot
Tozer, A.C. *d.* Collett H., Bournemouth
Vivian, S.F. Gunnersbury S., Chiswick

Belford, C. Private tuition
Blaikith, J. de la H. Fitzroy S., Crouch End
Elliot, B. Oakes Inst., Walton, L'pool
Field, C.W. Wellington Coll., Salop
Freemantle, H.V. Trafalgar H., Winchester
Fuller, C.M. St. Leonards Coll. S.
Hayford, A.R. Castle Hill S., W. Ealing
Kingwill, L.P. The College, Weston-super-Mare
Munday, H.P. Gram. S., St. Anne's-on-Sea
²Newton, S. Hutton Gram. S.
Pearce, A.L. Hasland H., Penarth

Blanksby, F.Y. Preston Classical, Math., & Comm. S.
Cornish, E.J. Taunton School
Faux, E.R. Chatham H., Ramsgate
Grainger, W.G. St. George's Coll., Wimbledon
Levy, I. Woolston Coll., Southampton
Pennington, W.F. Elmfield Coll., York
Reeve, W.A. *d.* King Edward VI. Middle S., Norwich
Salter, G.C. Steyne S., Worthing

²Blasdale, B.A. Private tuition
Brewis, B. Gram S., Chorlton-cum-Hardy
Cockrill, C.H. Yarmouth College
McKay, C.S. Cawley S., Chichester
Rabson, E.H. Gram. S., Friern Barnet
Stacey, R.H. Manor H., Clapham Common
Townson, F.J. Grosvenor Coll., Carlisle
²Tetlow, C.L. Gram. S., Sale
Williams, R.V. *e.* Private tuition
Wright, B.A. Ryde H., Ripley, Woking

Abingdon, G.R. Loughton School
Bowden, C.E. The Palace S., Bewdley
Creveld, J.B. Gram. S., Shoreham
Elmitt, L.B. Spilsby Gram. S.
Flint, A. Hatfield Coll., Doncaster
Fulton, S. Gunnersbury S., Chiswick
Harris, D.O. *a.* Trafalgar H., Winchester
Jolley, R. Catholic Gram. S., St. Helens
Langford, S.H. Felix H., East Dulwich
Moxon, G.J.F. Arlington Park Coll., Chiswick
Noël, G.E. Gorey Comm. S., Jersey
Pocock, H.C. Modern S., Gravesend
Stewart, L. *s.* Great Ealing S., Ealing, W.
Stranger, F.H. Taunton School
Taylor, G.S. The Palace S., Bewdley
Wallace, C.H. Crompton S., Southend-on-Sea
Williams, W.H. Hanley Castle Gram. S.

Attwood, H. Eton H., Southend-on-Sea
Butcher, C.W. High S., Hornsey Rise
Clubb, A.D. The Western Coll., Harrogate
Fiske, F.O. High S. for Boys, Croydon
Grace, A.W.D. Trafalgar H., Winchester
Pritchard, F.E. The Palace S., Bewdley
²Robertson, K.A. Mary St. House, Taunton
Walker, E.D. High S., Kirkby Stephen
Williams, W.H. 6 & 7 Windsor Crescent, Mannamead

Coupe, G. Catholic Gram. S., St. Helens
Field, W.A. Scarborough College
Scott, P.G. Barton S., Wisbech
²Smith, W.P. Gram. S., Sale
Turle, G.F.C. Taunton School
Wills, J.S. Grosvenor Coll., Carlisle

Andrews, W. Clifton Coll., North Shore, Blackpool
Simpson, S. Scorton Gram. S.
Haskins, A.W. Wykcham H., W. Hampstead

CLASS LIST—GIRLS.

(*For list of abbreviations, see page* 84.)

FIRST CLASS [or SENIOR].

Pass Division.

Collis, M.M. *s.* Ladies' Coll., Wellington, Salop
Hampson, E.M. Southport Comm. Coll.
Ritson, E. Brook Green Coll., W.
Watts, M.F. Ellerker Coll., Richmond
Hodge, M. *c.* Porthminster S., St. Ives
Smith, B. Stamford H., Bourne
Earnshaw, A.V. Girls' High S., Cheadle
Stanger, H.B. *c.* Arundel H., Scarborough
Corbett, C.M.E. *s.mu.* Ladies' Coll., Wellington, Salop
Dixon, R.J. Ladies' Coll., Wellington, Salop
Thomas, E.G. Parson's Mead, Ashstead
Booth, E. Brunt's Tech. S., Mansfield
Dickinson, D.M. Ladies' Coll., Wellington, Salop
Hartley, S.E. *d.* High S. for Girls, Wells
Clarke, E.L. Ellerker Coll., Richmond
Edmunds, G.M. Ladies' Coll., Wellington, Salop
Oldham, N. Ladies' Coll., Wellington, Salop
Alldridge, G. Ladies' Coll., Wellington, Salop
Harris, M.E. Ladies' Coll., Wellington, Salop
Webb, D.M. *s.* Oakover Girls' S., Burnham
Pugh, E. Boughrood H., Brecon
Dowton, F.L. Carden Girls' S., Peckham Rye
Payne, D.L. *s.* Ladies' Coll., Wellington, Salop
Scott, S. Penaraig Coll., Newport
Green, A.M. *s.* Ellerslie Ladies' S., Bromsgrove
Greenwood, E. Conv. of Notre Dame, Brixton Hill
Hardy, E.F. Northern Poly. Day S., Holloway Rd., N.
Middleton, P. Canning St. Council S., Benwell
Traviss, L.F.M. *d.* Eversley H., Cricklewood
Wheway, F.G. Milton H., Atherstone

SECOND CLASS [or JUNIOR].

Honours Division.

Bennell, M. *s.al.ms f.* Crouch End High S., Hornsey
Ware, V.W. *s.g.al.ch.d.* Portsmouth Girls' Secondary S.
Ironmonger, D.E. *h.a.bk.* Harborne College
Foster, M.A. *a.al.f.mu.* Portsmouth Girls' Secondary S.
Trice, B.M. *e.al.f.ch.* Portsmouth Girls' Secondary S.
Adams, A.M. *a.al.f.* Portsmouth Girls' Secondary S.
Marshall, N. *a.d.* Portsmouth Girls' Secondary S.
Cuthbert, A.W. *g.f.ch.* Portsmouth Girls' Secondary S.
Barrett, A. *f.ch.* Portsmouth Girls' Secondary S.
Bevis, J.F. *f.ch.* Portsmouth Girls' Secondary S.
Sylvester, D.B. *e.g.a.f.ch.* Portsmouth Girls' Secondary S.
Chapman, F. *g.a.f.ch.* Portsmouth Girls' Secondary S.
Gieve, G.M. *h.ms.* Crouch End High S., Hornsey
Higginson, A. *ch.* Portsmouth Girls' Secondary S.
Evans, I.M. *ch.* Portsmouth Girls' Secondary S.
Cassell, M.H. *f.* Portsmouth Girls' Secondary S.
Marshfield, D.G. *ch.* Portsmouth Girls' Secondary S.
Keen, M.E.E. Harborne College
Williams, W.E. *a.* Portsmouth Girls' Secondary S.
Hicks, M. *a.d.* Portsmouth Girls' Secondary S.
Vickers, K. *do.* Westmorland Rd. S., Newcastle-on-Tyne
Capper, E.M. *ch.d.* Portsmouth Girls' Secondary S.
Croucher, G.E. *f.ch.* Portsmouth Girls' Secondary S.
Quintrell, E.F. Portsmouth Girls' Secondary S.
White, E.A. *ch.* Portsmouth Girls' Secondary S.
Lucas, S. St. Andrew's Hall, Southport
Blake, D.C. *f.ch.* Portsmouth Girls' Secondary S.
Mackie, L. *h.g.sh.do.* Clark's Coll. Girls' S., Brixton Hill
White, C. *f.ch.* Portsmouth Girls' Secondary S
Haines, L. Portsmouth Girls' Secondary S
Dolan, R.E. *ch.* Portsmouth Girls' Secondary S.
Young, E.M.E. Portsmouth Girls' Secondary S.
Froud, K.A. *ch.* Portsmouth Girls' Secondary S.
Winstanley, G. Gram. S., Ashton-in-Makerfield
Joyce, A.M. *d.* Portsmouth Girls' Secondary S.
Dunning, D.N. *f.* Portsmouth Girls' Secondary S.
Morley, E.J. Norfolk H., Catford
Allison, A. *ch.* Secondary S., Guard St., Workington
Gard, S.M. Portsmouth Girls' Secondary S.
Ormrod, A. St. Andrew's Hall, Southport
Stephens, A. *al.* Arnot St. Council S., Walton, L'pool
Adams, D.H. *f.* Portsmouth Girls' Secondary S.
Worley, D.A. *ch.* Portsmouth Girls' Secondary S.
Hill, A.R. Evering High S. Stoke Newington
Smith, E.M. *d.* Secondary S., Guard St., Workington
Loder, E.P. Portsmouth Girls' Secondary S.
Whitbread, D.K. Portsmouth Girls' Secondary S.
Croucher, A.R. Upper Grove S., S. Norwood
Moult, W. *gm.* Brunt's Tech S., Mansfield
Poor, E.D. *f. ch.* Portsmouth Girls' Secondary S.
Tuck, V.M. Portsmouth Girls' Secondary S.
Hill, M. *ch.* Gram. S., Ashton-in-Makerfield
Lloyd, E.V. *h.* Ellerker Coll., Richmond

SECOND CLASS [or JUNIOR].

Pass Division.

[1]Burgess, A.E. *s.bk.* Cambridge H., Battersea Pk.
[1]Jennings, A. Brunt's Tech. S., Mansfield
[1]Boyes, M.C. Arundel S., Scarborough

Clift, H.G. Ladies' Coll., Wellington, Salop
Ward, V.L. Portsmouth Girls' Secondary S.

Cobb, E.M. Milton H., Atherstone
Latimer, E.C. *ch.* Gram. S., Ashton-in-Makerfield
Scorgie, D.G. *a.* Arnot St. Council S., Walton, L'pool
Wilson, H. Arnot St. Council S., Walton, L'pool

Billson, H.M. Ladies' Coll., Wellington, Salop

Bullen, S. Gram. S., Ashton-in-Makerfield
Harvey, L.M. *s.* Kelsey H., Hornsey Rise
Jones, C.M. *s.* Ladies' Coll., Wellington, Salop
Pendleton, M.F. 138 Heathfield Rd., Handsworth
Winsor, G. Portsmouth Girls' Secondard S.

[1]Feasey, E. Addey & Stanhope S., New Cross
Gidley, C.A. Portsmouth Girls' Secondary S.

Sapsworth, M. Harley H., Hereford
Tapley, O.A. *bk.* Priory S., Dover
Wright, E.P. High S. for Girls, Wells

Stewart, A. *ch.* Arnot St. Council S., Walton, L'pool

Miles, E.A. West Ham High S., Stratford
Palmer, N.F.M. Portsmouth Girls' Secondary S.
Tapsell, D.K. Buckingham Place Academy, Landport

[1]Crawshaw, M. Private tuition
Goulding, E.W. Queen's S., Cliftonville, Margate
Skeens, E.I. Oakley High S., Southsea

Edington, H.A. Cambridge H., Camden Rd., N.
Gourd, H. Portsmouth Girls' Secondary S.
Kerr, J. Secondary S., Guard St., Workington

[1]Young, H.M. Abercorn Coll., Dublin

Grattan, M.McD. *d.mu.* Beighton H., Sheffield
[1]Humphries, V.M. Athelstan H., Cliftonville, Margate
[1]Redman, D. Private tuition
Thornton, C.M. *f.ge.* Private tuition

Heron, E. Canning Street Council S., Benwell
Morley, G. *d.* Newcastle H., Lewes
Needs, W.E. Chippenham & Dist. County Secondary S.
Rigden, W. *bk.* Priory S., Dover

Blakesley, J.H. *f.* Private tuition
[1]Isherwood, E.B. *s.* Norma S., Waterloo, L'pool
[1]Péraudean, V. *f.* St. Ursula's Conv., Dover

[1]Gough, E.M. Ellerker Coll., Richmond
Hicks, E.B. St. Austell Pupil Teacher Centre
Mason, G.D. Malvern H., Birkdale
Reynolds, J. *f.d.* West Ham High S., Stratford
Robinson, F. Portsmouth Girls' Secondary S.

Allshorn, W.M. *f.* Loretto H., Highgate
Chown, A.M. *ch.* Portsmouth Girls' Secondary S.

Johns, E. St. Austell Pupil Teacher Centre
[1]Leaver, M.O. Penketh School
Noon, M. *h.* Pupil Teacher Centre, Ilkeston
[1]Yelland, C.M.V. Buda Coll., Aldrington, Hove

Broadhurst, D. Ladies' Coll., Wellington, Salop
Clift, M.I. Ladies' College, Wellington, Salop
Truffitt, E.G. *f.* West Ham High S., Stratford
Wilton, D.G. Harborne College

Bull, C.J. *bk.* Oakley High S., Southsea
Ismay, M.F. Secondary S., Guard St., Workington

Broadhurst, P. Ladies' Coll., Wellington, Salop
Newberry, O.H.G. Portsmouth Girls' Secondary S.
Pexton, S. Beighton H., Sheffield
Sutton, M. Queensberry S., Longton

Doggrell, S.A. Lithend Girls' S., Bishop's Waltham
Evans, E.T. *s.* Ladies Coll., Wellington, Salop
Harvey, E. *ch.d.* Queensberry S., Longton
Porter, E. Burstead H., Billericay
Smith, F. Private tuition

[1]Chapman, D.C. Ryde H., Ripley, Woking
Harrison, E. St. Andrew's Hall, Southport
Summers, N.F. Portsmouth Girls' Secondary S.
Bundy, C. St. Andrew's Hall, Southport

Malzard, J.L. *f.* Ashton H., St. Clements, Jersey
Pitcher, E.M. Cambridge H., Battersea Pk.

Budd, D.M. Felix H., E. Dulwich
Hollis, A.S. Coll. S., Erdington
Jeffery, B.M. Portsmouth Girls' Secondary S.
Mason, V. *bk.* Belvedere Ladies' S., Birkdale
[1]Robinson, E. Private tuition
Walker, D.B. *f.* St. Edmunsbury, Cardiff
Williams, G.W. Portsmouth Girls' Secondary S.

Beaver, D.A. Oakley High S., Southsea
Bolton, C. St. Andrew's Hall, Southport
Doyle, A. R.C. School, Kingsley Rd., L'pool
Mansell, N. *d.* Ladies' Coll., Wellington, Salop
Nicolle, M.F. *s.* Six Roads S., St. Lawrence, Jersey

Coombs, W.M. West Ham High S., Stratford
[1]Goodman, A.E. Ryde H., Ripley, Woking
Lamb, E. Freemen's Orphan S., Brixton
Rumsey, S.L. *s.* High S. for Girls, Wells
Stallard, M.N. Portsmouth Girls' Secondary S.
Wadham, F. Westbourne H., Cowes

Hill, B. St. Andrew's Hall, Southport
Knight, G.A. Portsmouth Girls' Secondary S.
Martin, O.M. *d.* Braughton S., Lewes
McCullum, M. *f.* Clarence H., Filey

Crow, S.D. Mayfield Coll., Marlborough
[1]Ridge, M.G. High S., Twickenham
Ritson, A. St. Andrew's Hall, Southport
Sanders, C.J. Portsmouth Girls' Secondary S.
Sargent, B.F. *sh.* Royal Masonic Inst., Clapham Junction

Bolton, M. The Lodge S., Hull
Bramble, E. Canning St. Council S., Benwell
Cook, F.L. Gram. S., Ashton-in-Makerfield
Kemp, I.J.D. Quarry H., Guildford
[1]Lalor, L.G. Private tuition
Sanders, L.G. Arnot St. Council S., Walton, L'pool
[1]Sladden, E. Private tuition
Trimm, D.E. *d.* St. Martin's High S., Dorking
Wood, C.M. Western H., Nottingham

Clarke, D.M. St. Margaret's, Cardiff

Bryce, G. *d.* St. Andrew's Hall, Southport
Davies, J.A. *ch.* Ferndale Secondary S., Rhondda
Day, D. Cambridge H., Camden Rd., N.
Gilbert, D.M. Private tuition
Jeffrey, R. Queensberry S., Longton
Marsh, L. Lithend Girls' S., Bishop's Waltham
[1]Warner, W. Brunt's Tech. S., Mansfield

Blakesley, M.M. *f.* Private tuition
Dallow, E.E. Harley H., Hereford
Kemp, A.E. Portsmouth Girls' Secondary S.
Smith, J. Burstead H., Billericay
Stuttard, F. St. Andrew's Hall, Southport
Webb, M. Gram. S., Ashton-in-Makerfield
Welch, D.M. High S. for Girls, Wells
[1]Williams, A.B. Highwood H., Liskeard

Cook, C.A. Claremont Coll., Forest Gate
Etches, A.G. Ladies' Coll., Wellington, Salop
Fox, E.A. Milton H., Atherstone
Heaven, M.I. Kenilworth, Bridlington
Mercer, D. Arnot St. Council S., Walton
Patmore, G.I. The Mount S., Banbury
Tompkinson, A. Queensberry S., Longton
Vernon, G. Portsmouth Girls' Secondary S.
Wood, N. Derby Institute for Girls

Cheatle, H.B. Milton H., Atherstone
Gilbert, E. *d.* Ladies' Coll., Wellington, Salop
Kent, M. *do.* Clark's Coll. Girls' S., Brixton Hill
March, E.M. Licensed Victuallers' Girls' S., S.E.
Newton, E. The Poplars, Small Heath
Rapier, B. *bk.* Fulford Field H., York

[1]Boyes, I. Arundel H., Scarborough

Chambers, E.H. Pupil Teacher Centre, Ilkeston
Creak, D. Cornwallis High S., Hastings
Hull, E. *ch.* Queensberry S., Longton
Harris, B M. Malvern H., Birkdale
Osborne, E. Middle Class S., Alverstoke
Slater, D.E. Westmorland Rd. S., Newcastle-on-Tyne
Stroud, G.M. Portsmouth Girls' Secondary S.
Teague, M. St. Austell Pupil Teacher Centre

Greaves, D.M. Girls' Gram. S., Levenshulme
Lawton, W.K. Belgrave Terrace S., Huddersfield
[1]Lough, M.I. Canning St. Council S., Benwell
Penn, E. Wellington Coll., Hastings
Scott, F.M. Prep. Classes, George S., Altrincham

Bellamy, E.H. Private tuition
[1]Quint, D. Private tuition
Roberts, N. Penpol Girls' S., Hayle
Speakman, E.F. Arnot St. Council S., Walton, L'pool
Stephens, M. Arnot St. Council S., Walton, L'pool
Taylor, P. Cambridge H., W. Dulwich
Webb, L.B. West Ham High S., Stratford
Woolley, M.E. Pupil Teacher Centre, Ilkeston

Butcher, E.M. Quarry H., Guildford
Llewellyn, D.I. *s.* Bell's Gram. S., Coleford
Macklin, O. The Manse, Buntingford

Biner, M.A. West Ham High S., Stratford
Hallam, G. Queensberry S., Longton
James, P. Fernside, Grantham
Mitchell, A.W. Portsmouth Girls' Secondary S.
Palmer, M. St. Austell Pupil Teacher Centre
Raddish, F.I. Girls' High S., Kibworth
Stephenson, D. West Ham High S., Stratford

Dash, E.F. Buckingham Place Academy, Landport
Doubleday, M. *s.* Fernside, Grantham
Shaw, M. St. Andrew's Hall, Southport
Southwell, E.E.G. Valley Bridge H., Scarborough
Taylor, R. Quarry H., Guildford

Gray, E.C. West Ham High S., Stratford
Marshall, N.A.F. Portsmouth Girls' Secondary S.
Rushton, D. St. Andrew's Hall, Southport

Bemi, M.W. Northfield, Stamford Hill
Brown, O. Priory S., Earl's Colne
Carter, M.E.V. Northfield, Stamford Hill
Gully, M.A.L. S. Farnboro High S.
Horn, D.G.R. Holmcroft S., Loughton
Jones, D.L. St. Maur Coll., Chepstow
Royle, M.G. St. Helen's Coll., Seven Kings

Brookhouse, W. Queensberry S., Longton
Dowse, L.M. West Ham High S., Stratford
Dyer, G.E.M. High S. for Girls, Wells
Dyke, M.L. Portsmouth Girls' Secondary S.
Potter, G. Derby Institute for Girls

[1]Eedy, C. Blenheim H., Fareham
Hammersley, L. Queensberry S., Longton
Kempton, G.E. Arnot St. Council S., Walton, L'pool
[1]Leonard, K.E. Abercorn Coll., Dublin
Smith, E.A. Roanoke Coll. S., Palmer's Green

Edes, A.M. Private tuition
Joyce, D.M. Porthminster S., St. Ives
Margetson, A.M. Queen's S., Cliftonville, Margate
Riley, M.A. Sunfield H., Wellington
Webley, M.A. *d.* Portsmouth Girls' Secondary S.

Gullick, E.K. Private tuition
Hall, S.J. Redby Girls' S., Sunderland
Mason, N. *d.* Technical Day S., Stalybridge
Senescall, E. Fernside, Grantham

Dixon, D. Secondary S., Guard St., Workington
Kitching, A.G. Private tuition
Leatherbarrow, A. St. Andrew's Hall, Southport
Rose, F.M. Private tuition

Friend, C.M. *do.* Northfield, Stamford Hill
Hanning, E.J. Westmorland Rd. S., Newcastle-on-Tyne
Hendry, A.E. Arnot St. Council S., Walton, L'pool
Linton, L.M. Girls' Gram. S., Levenshulme

Adams, M.R. West Ham High S., Stratford
Fletcher, K. Technical Day S., Stalybridge
King, E.M. *bk.* Thorntonville S., Thornton Heath
Leonard, H.M. Abercorn Coll., Dublin
Oakley, C.M. Alexandra Coll., Shirley

Evans, H.M.P. Melbourne Coll., Thornton Heath
[1]Hinds, V. Private tuition
Hodder, C.Y. Camborne H., Torquay
Hope, E., Brooklyn H., Wellington, Salop
Kirtley, A. Westbourne H., Cowes
Lewis, M.E. Private tuition
Osborn, J. Lyndal H., Midhurst

Duffield, W.E. Blenheim H., Fareham
Kennedy, V.M. Chippenham & Dist. County Secondary S.
Savage, N.L. Cambridge H., Camden Rd., N.
Scott, A.M.D. Westbourne H., Cowes
Stephens, J. Stoke Public Girls' S.
Williams, E. Prep. Classes, George St., Altrincham

Spencer, M. *d.* St. Andrew's Hall, Southport
Stevens, J.E. The Magnolias, Southsea
Stone, A. Broadgate S., Nottingham
Vivian, B.G. Gram. S., Hayle
Woodward, E.M. Clark's Coll. Girls' S., Brixton Hill

Clifford, I. *bk.* St. Elmo's Coll., Totton
Evans, H.A. Marist Coll. S., Paignton
Hyman, E.G. *f.* London Coll., Holloway Rd., N.
Simpson, E.S. Pupil Teacher Centre, Ilkeston
Sladden, W. High S., Tunbridge Wells
Smith, F.M. Woodside Coll., Southsea

Bosher, D.G. *d.* Royal Masonic Inst., Clapham Junction
Davy, W.J. High S., Tunbridge Wells
Rickard, E.T.M. Western H., Nottingham

Croll, M.E. High S., Twickenham
Duffett, M. Lyndale H., Midhurst
Oswald, M. Mayfield Coll., Marlborough
Rees, G. Ellerker Coll., Richmond
Sharp, L. Secondary S., Guard St., Workington

Ball, M. Queensberry S., Longton
Harper, E.M. Ellerker Coll., Richmond
Herlemont, S.G. *f.* Cambridge Coll., E. Twickenham
Horsley, E. Secondary S., Guard St., Workington
King, M. Valley Bridge H., Scarborough
Nicholas, F. West Ham High S., Stratford

Beazley, E.E. Hedingham, Wallington
Bonsall, E. West View, Alstonefield, Ashbourne
Bowen, K.E. Ladies' Coll., Wellington, Salop
Holland, C.S. Ladies' Coll., Wellington, Salop
Rigby, E. *ch.* Queensberry S., Longton
Sheperd, M.M. Stamshaw Council S., Portsmouth
Shingles, E. Private tuition

Berthoud, M. *d.* Loreto Conv., Manchester
Broadbent, I. The College, Churwell, Leeds
Grimshaw, A. Gram. S., Ashton-in-Makerfield
Picot, A.G. St. James's Coll. S., Jersey

Hunt, I. Pupil Teacher Centre, Ilkeston
Nunn, F. Fairfield H., E. Dereham
Renshaw, D.L. Portsmouth Girls' Secondary S.
Simmonds, K. Camborne H., Torquay

Collingridge, V.F. Ellerker Coll., Richmond
Drake, G.I. Brook Green Coll., W.
Edington, I.N. Cambridge H., Camden Rd., N.
[1]Ewens, E.K. Oakover Girls' S., Burnham
Gibson, E.I. The Mount S., Banbury
Gillett, J. St. David's Coll., Moreton-in-Marsh
Harrison, W. Brunt's Tech. S., Mansfield
Renshaw, B.H. Woking High S.

Binnie, C.E.I. Private tuition
Brown, A. Alexander Coll., Shirley
Bullivant, D. The Limes, Solihull
Gibson, H.M. The Mount S., Banbury
Hatton, J. Technical Day S., Stalybridge
Macdonald, M. Khamaria, Hampstead
Wainwright, G. Private tuition

Ashmore, E.M. Granville Coll., W. Croydon
Bell, R.S. Secondary S., Guard St., Workington
Grierson, E. St. Andrew's Hall, Southport
Hart, W. Bell's Gram. S., Coleford
Leverton, L.R. St. Austell Pupil Teacher Centre
Newman, E.M. Hurst Leigh, Southampton
Picken, M.S. Brooklyn H., Wellington, Salop

Chase, E.A. East Park Coll., Southampton
Davies, M. St. Andrew's Hall, Southport
Goodall, S.M. Private tuition

Chaney, F.M. St. Margaret's Bank S., Rochester
Lidbetter, R.M. Cambridge H., Camden Rd., N.
Stirland, J.E. *bk.* Victoria Coll., Lord St., L'pool
Truss, K. Ashley High S., Long Sutton

Atwill, A.I. Camborne H., Torquay
Essex, A.F. *f.* Private tuition
Haworth, J. Breck Coll., Poulton-le-Fylde
Holloway, E. St. Elmo's Coll., Totton
Sutton, L. Queensberry S., Longton
White, E. Private tuition
Whitworth, M.M. Milton H., Atherstone

THIRD CLASS.

Honours Division.

Rowtcliff, A.G. *s.e.a.d.* The Middle S., Holsworthy
Rawcliffe, V. *s.e.a.al.d.* St. Andrew's Hall, Southport

Turner, A. *s.e.a.al.d.* St. Andrew's Hall, Southport
Watt, E.I. *s.al.* Crouch End High S., Hornsey

Cooper, E. *s.e.g.a.al.d.* St. Andrew's Hall, Southport

GIRLS, 3RD CLASS, HONS.—*Continued.*

Winchester, E. *s.e.h.a.d.* Cornwallis High S., Hastings
Nokes, C.M. *e.a.f.* Croueh End High S., Hornsey
Belshaw, M. *s.e.a.d.* St. Andrew's Hall, Southport
Farrah, O.E. *e.h.g.a.f.* Lynstead, Boscombe
Opie, L.E.L. *s.d.* Lynton H., Portsmouth
Timberlake, V. *s.e.d.* Mountside, Hastings
Burns, C. *e.gm.* WestJesmondCouncilS., Newcastle-on-T.
Duns, E. *a.d.* WestJesmondCouneilS., Newcastle-on-T.
Gore, J. *s.e.a.d.* St. Andrew's Hall, Southport
Parkin, M.M. *s.g.f.d.* Wood End, Buxton
Collins, M.D. *e.h.g.a.f.* Highfield, Wallington
Rimmer, L. *s.e.a.* St. Audrew's Hall, Southport
Brown, M.M. *s.e.h.f.d.* Matterdale, Uxbridge
Broughton, D.J. *e.* Croueh End High S., Hornsey
Duckworth, J. *s.e.a.* St. Andrew's Hall, Southport
Lane, G.E. *s.e.* Wellington Coll., Hastiings
Anderson, E.M. *e.d.* St. George's H., Wimbledon
Franks, G.B. *s.h.* Conway H., Cove, Farnborough
Green, D. *s.e.a.d.* St. Andrew's Hall, Southport
Henderson, E.D. *al.d.* Westmorland Rd. S., Newcastle-on-Tyne
Hughes, M. *s.a.* St. Andrew's Hall, Southport
Kelly, E.E. *s.e.* Alexandra Coll., Shirley
Luckham, E.L. *e.a.* AlexandraColl., Shirley
Stokes, E. *s.h.d.* Camden H., Biggleswade
Knightbridge, C.L. *e.h.d.* High S. for Girls, Wanstead
Cole, E.F. *s.a.* Royal Masonic Inst., Clapham Junction
Cooper, E. *h.d.* Bourne H., Eastbourne
Ellis, I.M. *s.d.* Colville H., Eastbourne
Perrett, D.P. *d.* Larchmount Hall, Yatton
Portsmouth, K.M. *e.a.al.* Ashton H., St. Clement's, Jersey
Roberts, E. *s.e.al.d.* St. Andrew's Hall, Southport
Down, E. *a.* Stoke Public Girls' S.
Jones, E. *e.g.* Sunfield H., Wellington
Martlen, A. *s.e.a.al.* WestJesmondCouncilS., Newcastle-on-T.
Northmore, B.J.C. *e.h.f.* Holmwood Coll., Westcliff-on-Sea
Shelbourn, M. *s.e.h.a.* Fernside, Grantham
Smith, E.M. *s.h.* Westbourne H., Cowes
Williams, D. *e.a.f.* Stoke Public Girls' S.
Basker, G. *s.e.h.* Fernside, Grantham
Cartwright, E.W. *a* Brooklyn H., Wellington, Salop
Greenwood, C. *e.al.d.* Sandyford Rd. S., Newcastle-on-T.
Scheerer, E.R.L. *e.h.f.* Addiscombe H., Margate
Hesketh, J. *s.e.a.* St. Andrew's Hall, Southport
Peeks, H. *s.e.f.d.* Private tuition
Richards, M. *s.e.d.* Japonica H., Exmouth
Runciman, G.L. *s.e.a.* High S. for Girls, Wanstead
Biddlecombe, E.M. *e.* Westbourne H., Cowes
Foot, O. St. Elmo's Coll., Totton
Frank, G. *e.* Beighton H., Sheffield
Reynolds, C.G. *s.e.f.d.* Private tuition
Dalton, D.H. Licensed Victuallers' Girls' S., S.E.
Gratton, R. Mayfield Coll., Marlborough
Harrison, E. *s.a.* Penketh School
Oxford, G. *s.e.a.* GrosvenorH., Cricklewood
Rush, R.D. *s.e.f.* WellingtonColl., Hastings
Smith, I. *s.d.* St. Andrew's Hall, Southport
Wilkie, M. *a.d.* St. Andrew'sHall, Southport
Delves, M.M. *e.g.a.d.* Ladies' Coll., Wellington, Salop
Harding, E. *a.* WestJesmondCouncilS., Newcastle-on-T.
Harris, E.G. *s.e.f.d.* Harley H., Hereford
Jenkins, E.M. *s.e.d.* SunfieldH., Wellington
McGillivray, L.B. Alexandra Coll., Shirley
Nichol, M.L. *s.e.a.* SunfieldH., Wellington
Parsons, M.M.A. *s.a.* The Middle S., Holsworthy
Patterson, M.D. *e.h.al.* Westmorland Rd. S., Newcastle-on-Tyne
Burgoine, D.M. *s.e.g.d.* Harborne College
Daniel, M.L. *e.* Private tuition
Dixon, A. *a.al.* Westmorland Rd. S., Newcastle-on-Tyne
Harrison, I. *e.* Harborne College
Mountain, D. Beighton H., Sheffield
Rimmer, H. *s.a.* St. Andrew's Hall, Southport
Stephens, H.M. *s.e.f.* West Ham High S., Stratford
Walker, D. WestJesmondCouncilS., Newcastle-on-T.
Bath, M.A. *s.* Sunfield H., Wellington
Chester, M. *g.a.d.* Somerville H., Northampton
Gornall, H. *g.d.* St. Andrew's Hall, Southport
Kitz, M.M. *s.e.h.g.f.* The Oaks, Harrow
Murray, E. *s.* St. Andrew's Hall, Southport
Olney, G.S.L. *e.d.* Carlyle Coll., Brighton
Piggott, M.R.C. *d.* Royal Masonic Inst., Clapham Junction
Simons, D. *s.e.* Mission S. for Hebrew Children, Streatham Common
Warburton, A. *d.* St. Andrew's Hall, Southport
East, E.M. Temple Square S., Aylesbury
Harris, G.M. *s.e.* Belvedere Ladies' S., Birkdale
Lester, A.E. *s.a.d.* Beauclerc S., Sunbury-on-Thames
Reed, W.F.M. *a.* Melbourne H., Clapton Sq., N.E.
Warren, M.G. *f.* Broadgate S., Nottingham
Young, J. *s.al.d.* Sandyford Road S., Newcastle-on-Tyne
Alvis, I. *s.h.d.* Larchmount Hall, Yatton
Littleton, K. *e.* Stoke Public Girls' S.
Mount, E. *s.f.* Glenarm Coll., Ilford
Smith, D. *s.e.d.* Burstead H., Billericay
White, M.A. *e.d.* Bellevue, Herne Bay
Carruthers, G. *s.e.* Penketh School
Daniels, E. *e.a.d.* Stoke Public Girls' S.
Drake, H. *s.e.g.* Ladies' Coll., Wellington, Salop
Fletcher, K.L. Cranbury High S., Southampton
Jones, D.E.H. *g.* Ladies' Coll., Wellington, Salop
Lynn, D. Fernside, Grantham
Pearn, R. *e.g.* Stoke Public Girls' S.
Rosenblum, A. Mission S. for Hebrew Children, Streatham Common
Shillito, T. *s.* Private tuition
Tyaeke, I.A. *a.* Orton Coll., Coleshill
Wight, E.N. *s.e.f.* Elvaston, W. Dulwich
Bray, G.A.R. *d.* MayfieldColl., Marlborough
Brett, H.M. *e.* Lonsdale H., Norwich
Campbell, C.K. Westmorland Rd. S., Newcastle-on-Tyne
Eardley, E.M. *s.e.* Ladies' Coll., Wellington, Salop
Fuller, M. *e.d.* Belvedere Ladies' S., Birkdale
Lapham, L.M.V. *e.d.* Stapleton Hall S., Stroud Green
Morgan, D.E.M. *e.* Ladies' Coll., Wellington, Salop
Radford, K.V. *s.* Hampton H., Cotham
Russell, D.L. *bk.* Alexandra Coll., Shirley
Sharpe, P.M. *s.* St. Maur Coll., Chepstow
Thorley, G. *e.f.* Loreto Conv., Manchester
Thrower, M.E. *d.* Rosebank S., Alton
Whitehead, E.A.B. *d.* Carden Girls' S., Peckham Rye

THIRD CLASS.

Pass Division.

2Lock, M. Mountside, Hastings
2Byerley, C. PortsmouthGirls'SecondaryS.
2Hawker, G. Mountside, Hastings
2Bond, E.M. PortsmouthGirls'SecondaryS.
2Cater, E.M. Harley H., Hereford
2Griffiths, G.D. *s.* Ashburne H., Chepstow
2Renn, L.D. *mu.* Oakley High S., Southsea
2Beaver, B.J. Oakley High S., Southsea
2Le Montais, Z.R.DeL. St. James's Coll. S., Jersey
2Deadman, R.J. Stuart H., Gravesend
2Paterson, A.D. *d.* Private tuition
2Smith, B.D. *s.mu.* EllerkerColl., Richmond
2Bartlett, K.L. Marist Coll. S., Paignton
2Tickle, M.L. Modern S., Wealdstone
2Carvill, D.E. Braughton S., Lewes
2Dacombe, M.M. *s.* AlexandraColl., Shirley
2Greenaway, A. *do.* St. Agnes'S., Willesden
2Ricketts, A.M. High S. for Girls, Wells
2Munson, F.A. AshleyHighS., LongSutton
2Panting, E.F. St. Olave's Taunton
2Plowman, D.M. Hill Croft S., Wellingborough
2Colborne, P. Ryde H., Ripley, Woking
2Cook, H. Highfield S., Croydon
2Dixon, C.K. Glenarm Coll., Ilford
2Benson, H.E. Pupil Teacher Centre, Ilkeston
2Doubell, O.F. Western H., Nottingham
2Pound, D.M. Kensington H., York
Berrington, H. Weirfield S., Taunton
Day, L. Cambridge H., W. Dulwich
2Barber, L.D.E. Newcastle H., Lewes
2Crossley, W. St. Andrew'sHall, Southport
2Rochell, P. Queensberry S., Longton
2Sharpe, E.N. St. Maur Coll., Chepstow
2Stubbs, M. Brunt's Tech. S., Mansfield
2Mills, B. Penpol Girls' S., Hayle
2Norkett, R. Portsmouth Girls' Secondary S.
Ball, L. *al.d.* St. Andrew's Hall, Southport
Gledhill, E. *d.* St. Andrew'sHall, Southport
Heading, B. *a.* Lonsdale H., Norwich
Hewitt, E. WestmorlandRd. S., Newcastle-on-Tyne
Hitchings, E. *s.e.a.* Stoke Public Girls' S.
Lockley, E.M. *a.d.* SunfieldH., Wellington
Saunders, E.M. Camden H., Biggleswade
Scott, D.W. *s.f.* The Oaks, Harrow
Stevens, F. Stoke Public Girls' S.
Thomson, M. *s.* Girtonville Coll., Aintree
Wheatley, H.A. *s.e.* D'ArcyHey, Boscombe
Barnes, I.F. *s.* Alexandra Coll., Shirley
2Hards, W.M. Maidenhead Council S.
Hardy, E.A. *a.d.* ArundelH., Scarborough
Hooper, E.M. *e.d.* Edgehill Girls' Coll., Bideford
Kett, H. Royal Masonic Inst., Clapham Junction
Large, E.J. *e.d.* Prospect H., Stechford
Leigh, A.C.A. Fitzroy Coll. S., Fitzroy Sq., W.
Monk, G.M. *s.* Fernside, Grantham
Price, J.M. Royal Masonic Inst., Clapham Junction
Read, H.E. *h.* DudleyH., StokeNewington
Siggs, O. *e.a.* Mountfield, Newtown, Uckfield
Wagstaff, E. *e.* Royal Masonic Inst., Clapham Junction
Carter, W.M. Carlyle Coll., Brighton
Cousens, M.B. *s.* Normanton, Brighton
Dodson, M.G. *f.* 109 Uxbridge Rd., Ealing
Gale, I.E. Melbourne H., Clapton Sq., N.E.
2Hiett, D. St. Elmo's Coll., Totton
Hutchinson, E.P. *s.e.* BleakH., Brentwood
Lawrence, G.M. *d.* Holmwood Coll., Westcliff-on-Sea
2Marsh, E.A. Alexandra Coll., Shirley
Nelson, M.I. *e.al.* Sandyford Rd. S., Newcastle-on-Tyne
Overstone, A.M. *s.e.* Drayton H., Newport
2Rawson, E. Pupil TeacherCentre, Ilkeston
2Ray, P. Canning St. Council S., Benwell
Swift, V.M. *s.* Royal Masonic Inst., Clapham Junction
Warder, N. *a.* Stoke Public Girls' S.
Anderson, M.R. Salisbury H., Plymouth
2Beeley, D. Technical Day S., Stalybridge
Clegg, M.L. Lynton H., Portsmouth
Gantlett, H.M. *s.e.* Mayfield Coll., Marlborough
2Loffill, M. Queensberry S., Longton
Loveless, W.M. *d.* High S. for Girls, Wells
MacEwen, M.S. *s.e.d.* The Mount S., Banbury
Nash, E.M. *d.* St. George's H., Wimbledon
Pattison, M. *a.* Canning St. Council S., Benwell
Trewin, F.W. *s.d.* Harley H., Hereford
Williams, K.W.P. *a.d.* Royal Masonic Inst., Clapham Junction
Bolton, E.I.A. High S., Waltham Cross
Darrell, D.L. Arundel H., Scarborough
Felgate, J.S. *e.* Dedham College
Greenwood, G. *s.e.d.* East Bridgford Coll.
Hunn, D.M. *d.* Quarry H., Guildford
Jackson, O.T. *s.f.* Elvaston, W. Dulwich
2McLaren, M. Hedingham, Wallington
Middleton, L. *d.* Thorpt High S., Norwich
Morgan, D.M. *s.* Southernhay S., Exeter
Pascoe, W. *e.a.* Salisbury Rd. Girls' S., Plymouth
Porteous, E.M. *e.a.d.* Ellerker Coll., Richmond
Potter, G. *a.d.* Stoke Public Girls' S.
Tait, C.M. *a.* Westmorland Rd. S., Newcastle-on-Tyne
Thompson, P.T. *d.* Private tuition
Wallace, E.K. *e.* Valley Bridge H., Scarborough
Ward, L.M. *a.* Westmorland Rd. S., Newcastle-on-Tyne
Whitburn, D.L. Sandyford Rd. S., Newcastle-on-Tyne
Beaton, M.A.H. *e.* FellenbergS., Maidstone
Blaker, J. *s.e.f.d.* Raglan H., Brighton
Cockwell, N.D. Hope Lodge S., Bexley Heath
2Craike, L. Canning St. Council S., Benwell
Crease, H.M. Larchmount Hall, Yatton
2Desmares, E.R. Plaisance Terrace S., St. Luke's, Jersey
Gard, E.T. *a.d.* Technical S., South Molton
Glass, C. Mayfield Coll., Marlborough
Goldberg, C. *d.* Sandyford Rd. S., Newcastle-on-Tyne
2Hobson, A. Queensberry S., Longton
2Kemp, M. Mileham S., Swaffham
2Kidd, M. *bk.* Portsea Coll. S.
London, F.G. *e.* Lulworth H., Caerleon
2Madge, Q.L. Porthminster S., St. Ives
2Pérard, L. Plaisance Terrace S., St. Lukes, Jersey
2Perolz, K.A. Kelsey H., Hornsey Rise
Phang, R.E.A. *d.* Grosvenor Coll., Bath
Rattenbury, E. St. Andrew's Hall, Southport
Richards, H.A. *e.* 38 Beckenham Road, Penge
Tuff, M.A. *e.* Westmorland Rd. S., Newcastle-on-Tyne
Wilson, E. *s.e.* Somerville H., Northampton
Barnicott, A. *d.* Stoke Public Girls' S.
Boughtwood, A.K. Burstead H., Billericay
Brown, G.E. Alexandra Coll., Shirley
Dobson, B.M. Westbourne H., Cowes
Dutton, D. *e.d.* Ladies' Coll., Wellington, Salop
Eve, E.V. *e.* Elm Lodge, Petersham
Farlow, D. Stoke Public Girls' S.
Fisher, G.M. Dresden H., Evesham
Franklin, C. *e.a.* NortonLodge, Small Heath
Goold, S. *e.* Fernside, Grantham
Hill, G. *e.d.* Shamrock H., Palmer's Green
Holder, G.E. Park Road S., Bingley
Hulme, N. Cole Hill S., Tamworth
2Hunston, D. St. David's Coll., Moreton-in-Marsh
2Lyde, A. Canning St. Council S., Benwell
Probert, L.M. *s.g.d.* Ladies' Coll., Wellington, Salop
Procter, K. *a.* Ashburne H., Chepstow
Rimmer, C. *e.al.* St. Andrew's Hall, Southport
Robson, E.D. *e.d.* Private tuition
Ross, P.M. *e.* Fairhaven, Batheaston, Bath
Sayell, D.E. Hope Lodge S., Bexley Heath
Shearing, M.A. Crouch End High S., Hornsey
2Betts, G.M. Lonsdale H., Norwich
2Cox, N.E. Cambridge H., Battersea Pk.
Dawson, M. *d.* Cornwallis High S., Hastings
Duxfield, F. St. Andrew's Hall, Southport
Keay, E.Y. Girtonville Coll., Aintree
2Lord, A.D. Sunnybrae, Southport
Luckley, A. *d.* Westmorland Rd. S., Newcastle-on-T.
Reeve, C.M. *e.* High S. for Girls, Longsight
2Ross, M.S. BudaCollege, Aldrington, Hove
Sparks, M. *a.* Commercial S., WoodGreen
2Touzel, E.M. *f.* Les Marais High S., Fauvre La Rocque, Jersey
2Wilcock, V. Gram. S., Ashton-in-Makerfield
Williams, F.M. *e.* Royal Masonic Inst., Clapham Junction
Banks, M.C. *s.* Girtonville Coll., Aintree
Bristow, E. *a.* SutherlandH., Gt. Yarmouth
2Charlton, M. Canning St. Council S., Benwell
Clarke, M.W. *e.* St. Margarets, Cardiff
2Colmer, O. Woolston Ladies' Coll., Southampton
2Edney, M.A. Brook Green Coll., W.
Gottrell, I.G. *a.f.* Ashton H., St. Clement's, Jersey
Hutton, G. *e.g.* Warwick H., Roade
Scottorn, N. Derby Institute for Girls
Smith, G.A. High S., Waltham Cross
2Summers, J.L. Clark's Coll. Girls' S., Brixton Hill
Taylor, D. *s.d.* St. Andrew'sHall, Southport
Thompson, D. *e.f.* Sunnyholme, Knaresbro'
Truscott, L. *s.a.* Stoke Public Girls' S.
Coates, E.A. Sandyford Rd. S., Newcastle-on-Tyne
2Cottee, E.G. Rose Bank, Brentwood
Davies, M. *e.* St. Maur Coll., Chepstow
Foster, D.A. Wellington Coll., Hastings
Foster, H.J. *d.* Private tuition
Garner, A.M. Temple Square S., Aylesbury
Heyward, D.E. *f.* Matterdale, Uxbridge
Hodson, E. Orton Coll., Coleshill
Hunton, E. *e.f.* 50 Western Hill, Durham
2Lane, F.E.M. High S., Oakengates, Salop
Levine, A. *s.a.* Mission S. for Hebrew Children, Streatham Common
Manger, P.R. *d.* Elvaston, W. Dulwich
Miles, R. *d.* MalvernS., BeestonHill, Leeds
Miller, M.G. *f.d.* Matterdale. Uxbridge
Organ, G. Stoke Public Girls' S.
Ramsay, A.I. *a.* Westmorland Rd. S., Newcastle-on-Tyne
Rigby, E. *s.e.* TheGables, LeightonBuzzard
Townsend, H.F. *s.* Elvaston, W. Dulwich
Weddle, J.L. Sandyford Rd. S., Newcastle-on-Tyne
Wilde, D. *d.* St. AnnesColl., St. Annes-on-Sea
Wilkinson, M.M. *e.a.* East Bridgford Coll.
Allmond, D.E. *s.* Licensed Victuallers' Girls' S., S.E.
Barnes, P. *a.f.* Grosvenor H., Wokingham
Bond, M. St. Andrew's Hall, Southport
Coulson, E.T. *e.d.* Westoe High S. for Girls
Cubitt, I.M. *s.e.* Private tuition
2Herlihy, A. Stoke Public Girls' S.
2Lowe, L. Pupil Teacher Centre, Ilkeston
Morgan, F. *e.* Summerfield Hall, Maesycwmmer
2Newman, L. St. Maur Coll., Chepstow
Nicholson, E.D. Sandyford Rd. S., Newcastle-on-Tyne
2Raphael, K. *f.* Kingsley S., Hampstead
2Seward, L. Private tuition
Umpleby, C.M. *d.* Skippon Terrace S., Thorne

GIRLS, 3RD CLASS, PASS—*Continued.*

²Warne, H. Stoke Public Girls' S.
Watty, O.R. Alexandra Coll., Shirley
Webber, F.M. Japonica H., Exmouth
Williams, N. *e.* Crouch End High S., Hornsey

Cocking, F.E. St. George's H., Doncaster
²Corfield, J.A. Private tuition
Davis, H.C. *e.* Edgehill Girls' Coll., Bideford
Dixon, I.J. *d.* Haughton School, York
Dodwell, M.E. *s.e.f.* Modena H., Ealing
Eddowes, L. St. Andrew's Hall, Southport
Everett, D. *s.* Private tuition
²Fear, L.F.
Central Council S., Weston-s.-Mare
Grant, I. *e.f.* High S. for Girls, Wells
Guest, E.K. *g.* St. George's H., Doncaster
Izod, W.A. Crouch End High S., Hornsey
King, B.E.D. *a.*
Royal Masonic Inst., Clapham Junction
Martyn, A. *d.* Alexandra Coll., Shirley
Newton, V.R. Elm H., Ealing
Nicholls, I.M.
Royal Masonic Inst., Clapham Junction
²Simpson, E.R. Private tuition
²Slater, M.A. *f.*
Civil Service Acad., Manchester
Thornton, H.
Belgrave Terrace S., Hudderfield
Turner, M. *d.* Norma S., Waterloo, L'pool
Westlake, E. *e.a.* Stoke Public Girls' S.

Becquet, A.H. *f.* St. James's Coll. S., Jersey
Clothier, A.M. *s.*
Edgehill Girls' Coll., Bideford
Dale, E.K. *d.* Alexandra Coll., Shirley
Davenport, E.M. *e.*
Royal Masonic Inst., Clapham Junction
Foster, M.A.L. *d.* Elm Lodge, Petersham
Gillman, I. Priory S., Dover
Hardy, E. *a.al.*
Sandyford Rd. S., Newcastle-on-Tyne
Holzbacker, E.C.
Stapleton Hall S., Stroud Green
Lee, M.E.A. Cleveland H., Lower Clapton
²Stonestreet, M. *s.* Lee College, Eastbourne
²Williams, A. Academy, Crewe

Alderson, E. St. Andrew's Hall, Southport
Arnold, M.F. St. Catherine's S., New Cross
Barnard, B.C. *d.* Kenilworth S., Ealing
Bennett, E. *d.* Beighton H., Sheffield
Browne, V. *d.* The Crescent S., Norwich
Bury, L.F.M. *f.* Girtonville Coll., Aintree
Cookson, F.J. Girtonville Coll., Aintree
Cornforth, G. *a.d.*
Sandyford Rd. S., Newcastle-on-Tyne
Dickinson, M.E. *d.*
C'aremont Coll., Forest Gate
Dunn, F.E.B. *d.* The Magnolias, Southsea
²Eaude, H.E. Private tuition
Emmett, N.A.B. Dunnington, Muswell Hill
Foster, D. *e.*
Salisbury Rd. Girls' S., Plymouth
Green, F.M. *e.* Ruskin Coll., Brockley
Hampton, H.M.
Ladies' Coll., Wellington, Salop
Hayes, V.A.M. *s.* Glenarm Coll., Ilford
Hyman, G. *s.e.*
Westmorland Rd. S., Newcastle-on-Tyne
John, M. *e.* Gelliwastad S., Pontypridd
Low, E. The Crescent S., Norwich
Mansell, M.B. *e.* Olton College
Powell, C.E.M. *s.* Penketh School
Rigler, E.M. *s.* D'Arcy Hey, Boscombe
Turner, J.L. *s.*
Sandyford Rd. S., Newcastle-on-Tyne
²Turney, M. Cambridge H., W. Dulwich
²Usher, D.L. Private tuition
Vennidt, A.B.C.
Hill Croft S., Wellingborough
Winstanley, F.W. *a.d.*
Girtonville Coll., Aintree

Attewell, E.M.
Storrington S., Westcliff-on-Sea
²Chidgey, K.G.
West Ham High S., Stratford
Cook, F.M. *e.d.*
Gram. S. for Girls, Worcester
Dakin, M.E. *a.*
Beauclere S., Sunbury-on-Thames
Dawson, W.M. *e.* Kenilworth, Bridlington
Dressler, E.L. *d.*
Licensed Victuallers' Girls' S., S.E.
Flint, A. Ladies' S., The Close, Brighton
Frankling, J.E.M. *e.*
Park C., Northumberland Pk., Tottenham
Gruchy, E.M. *a.* St. James's Coll. S., Jersey
Jones, D.W. *s.g.*
Ladies' Coll., Wellington, Salop
²Kitto, D.G.M. High S., Tunbridge Wells
Lester, N. Dunmore, St. Leonards-on-Sea
Ridge, E.I. *e.* The Magnolias, Southsea
Robinson, E.M. *e.d.*
Tunbridge Wells High S.
²Sehembry, A.M. Lee College, Eastbourne
Taylor, M.A. *e.* Highfield, Wallington
Thorley, R. Loreto Conv., Manchester
²Wilkin, G.E.E. Mileham S., Swaffham
Wilson, E.D. *s.e.*
Avondale Coll., Winchmore Hill

Best, S. Crouch End High S., Hornsey
Briggs, D. *d.* Warwick H., Roade
Bunch, A.K. *a.*
Ladies' Coll., Wellington, Salop

Harry, A.E. *d.* Grosvenor Coll., Bath
Hawley, D. *d.* Westoe High S. for Girls
²Hirst, A.I. Malvern H., Birkdale
James, H. Fordcleigh Coll., Newton Abbot
Jenkins, E. *e.a.* Seminary, Abbeyleix
Lane, M.D.
Royal Masonic Inst., Clapham Junction
²Langham, E.B. Highfield S., Croydon
²Lavington, E.M. Maidenhead Council S.
Lidbetter, K.M. *e.*
Cambridge H., Camden Rd., N.
Robson, M.M. Private tuition
Sharman, B.A. Somerville H., Northampton
²Saunders, G.L.F.
Normacot Church Girls' S., Longton
²Wilding, E.E. Bell's Gram. S., Coleford
Young, O C. *e.* Abercorn Coll., Dublin

²Angell, G.
Woolston Ladies' Coll., Southhampton
Badger, F.M. *d.* Granville Coll., W. Croydon
²Bott, J. Academy, Crewe
Chapman, I.F. Oakley High S., Southsea
Crofts, D.G. *e.* Hartington H., Beckenham
Davie, E C. 7 Grange Crescent, Sunderland
Gale, D.M. *d.*
Melbourne Coll., Thornton Heath
Harker-Thomas, G.R.
St. Catherine's S., New Cross
Hillen, L.F. Cambridge H., Camden Rd., N.
Jackson, G.M.F. *s.* Abbeyfield S., Derby
²Moore, M. Dresden H., Evesham
²Noakes, H.M. Tunbridge Wells High S.
Norman, V.E. *s.* Froebel H., Worthing
Pyne, R.A. *s.*
Montpellier Coll., Budleigh Salterton
²Roberts, M.F.D. Bell's Gram. S., Coleford
Rolls, H.K.
20 York Villas, Prestonville Rd., Brighton
Spink, I.M. *a.* Sutherland H., Gt. Yarmouth
Voigt, W.M. *e.* Llanberis, Ealing
Wicke, G.K. Grovemount, Muswell Hill

Bowman, A.E.
Westmorland Rd. S., Newcastle-on-Tyne
Chatterton, H.M.
St. George's H., Wimbledon
Cole, W.M.C. *d.* St. Kilda's Coll., Redland
Driskell, G.E. Modena H., Ealing
Elmy, H.M. *s.*
Licensed Victuallers' Girls' S., S.E.
Godfrey, E.G. *s.e.* Salisbury H., Plymouth
Holt, D.E. Alexandra Coll., Shirley
Jones, D.M. *a.d.* Sunfield H., Wellington
²Jordan, B. Loreto Conv., Manchester
Kent, D.A. *e.d.* Lonsdale H., Norwich
Nicholls, O. Drayton H., Newport
Sheppard, L. *e.d.* Warwick H., Roade
Topham, W. *s.* Fernside, Grantham
²Van Dort, G.E.
East Park Coll., Southampton
Wilson, N. *d.*
W. Jesmond Council S., Newcastle-on-T.

²Addy, M.A. Private tuition
Bottomley, F. *e.* Breakspear Coll., Brockley
Brown, F.M. Westbourne H., Cowes
Burton, M.C. *d.* Private tuition
²Copelin, I. Stuart H., Gravesend
Gibson, C. *a.*
Chatwin H., Hurworth-on-Tees
Hart, J.C. Addiscombe H., Margate
Hosking, A. St. James's Coll. S., Jersey
²Knapp, D.M. 114 Cathedral Rd., Cardiff
Lamin, I.E. Temple Square S., Aylesbury
Ockmore, E.M. *a.d.*
Licensed Victuallers' Girls' S., S.E.
Perfitt, M. *s.* Lansdowne Coll., Notting Hill
Povey, L.E. Hemdean H., Caversham
Russell, E.M.
St. Winifred's High S., Southampton
Rymer, G. *e.* Ashburne H., Chepstow
Stafford, M. Breck Coll., Poulton-le-Fylde
Ward, K.A. *e.* Buda Coll., Aldrington, Hove
Wraith, M.A. Westoe High S. for Girls

Baudains, L.M.
Collegiate S., Val Plaisant, Jersey
Brooking, W. Stoke Public Girls' S.
Burt, N. *s.* Fernside, Grantham
Clarke, A.A. Lulworth H., Caerleon
²Cripps, E.M. Private tuition
²Day, E. Queensberry S., Longton
²Drew, C.M. Holly Bank S., Bridgwater
Duncan, E.H. *e.*
Sandyford Rd. S., Newcastle-on-Tyne
Hobley, N.B. *d.*
Temple Square S., Aylesbury
Howell, L.M. *s.*
Summerfield Hall, Maesycwmmer
Hudson, T. Loreto Conv., Manchester
Hunt, D. *e.* 11 Church St., Oldbury
²Inee, A.G.
Graysville, Maple Road, Leytonstone
Letherby, E.L. Gunnerside S., Plymouth
Marsden, W. *e.* St. Andrew's Hall, Southport
McInnes, D M.
High S., York Rd., Chorlton-cum-Hardy
²Mowatt, M.A. St. Paul's Girls' S., Chatham
Park, E C. *d.*
Royal Masonic Inst., Clapham Junction
Pitts, I. Rose Bank, Brentwood
Rea, L.A. Gram. S. for Girls, Worcester
²Smith, E. St. Andrew's Hall, Southport
Tanner, E.M. Edgehill Girls' Coll., Bideford
²Ward, L.D. Sirsa House, Cheltenham

Bowyer, L.M. Grosvenor H., Wokingham
Cripps, V.M. Colville H., Swindon
Miller, B.St.J.
Beulah House High S., Balham
Mills, E.
Westmorland Rd. S., Newcastle-on-Tyne
Nixon, M. *d.*
Westmorland Rd. S., Newcastle-on-Tyne
O'Brien, F.R.
Westmorland Rd. S., Newcastle-on-Tyne
Ogle, R.M.
St. Anne's Coll., St. Annes-on-Sea
²Pistell, E.M.
Middle Class S., The Athenæum, Maidstone
Potts, F.
Canning St. Council School, Benwell
²Prince, G.E.D. Private tuition
Purvis, N.O. *e.*
Melbourne Coll., Thornton Heath
²Roscoe, A. Private tuition
Shearman, L.
Valley Bridge H., Scarborough
Simmons, G. Norma S., Waterloo, L'pool
Thompson, E.M. Coll. S., Erdington
Warr, D. Warwick H., Roade

Blacklock, M. Loreto Conv., Manchester
²Bray, L. Stoke Public Girls' S.
²Butler, V.A.
Mornington H., West Kensington
Chapman, H. St. Andrew's Hall, Southport
Dudley, E. *d.*
Lansdowne College, Notting Hill
Evans, M.M.E. Marist Coll. S., Paignton
Fulton, R.B. Private tuition
²Hearn, E. Private tuition
Kemball, B. Quarry H., Guildford
²Matthews, D.K. Kingsley S., Hampstead
²Millard, M.K Blenheim H., Fareham
Rose, M.B. Fellenberg S., Maidstone
²Thompson, D.St.L. Private tuition
Whillier, G. Oxford H., St. Leonards-on-Sea

Arnold, G.F. Rose Bank, Brentwood
Atkinson, K.C. *d.* Clyde H., Reading
Bewers, G.H.
Melbourne Coll., Thornton Heath
Brady, D.V. Ellerker Coll., Richmond
Chester, L.V. Dunnington, Muswell Hill
²Deakin, G.E.
Licensed Victuallers' Girls' S., S.E.
Gillard, A. Fairhaven, Batheaston, Bath
Palmer, E.M. *e.*
Fairhaven High S., Nr. Lytham
Palmer, W.M. Southend College
²Payne, M.C. Tunbridge Wells High S.
Pitchell, I. Girls' Coll. S., Camberley
Richards, A.M. *s.e.* Drayton H., Newport
Sabine, M. Beulah House High S., Balham
Smith, K.A. Highfield S., Croydon
Talmey, B.E. Froebel H., Worthing
Thomas, M. Penpol Girls' S., Hayle
Thompson, E. St. Andrew's Hall, Southport
²Willcox, N. Academy, Crewe

²Ball, D. Springfield S., Stockport
Bannerman, N.R.
Granville Coll., W. Croydon
Bondard, C.M.A. Broadgate S., Nottingham
Colman-Smith, I.
High S. for Girls, Wanstead
Fawcett, L. *a.*
Westmorland Rd. S., Newcastle-on-Tyne
Gregory, B. St. Maur Coll., Chepstow
Harvey, E.M. *d.* Olton College
Hilton, S.M. Lancaster Coll., West Norwood
Mascall, D. *d.*
Beulah House High S., Balham
Morgan, M.D. *s.* Thorpe High S., Norwich
Preston, M.B. *e.* Essex H., Saltash
Shury, P.L. *d.* Highfield S., Croydon
Smith, E.R. Durham H., Eastbourne
²Taylor, J. Technical Day S., Stalybridge
Treseder, M. *d.* St. Margaret's, Cardiff
Vorley, M. Hill Croft S., Wellingborough

Cheffius, E.M. Milton H., Highgate
Field, M.J. Japonica H., Exmouth
Ings, R. Rosebank S., Alton
Ross, P.A.I. Westbourne H., Cowes
Schubert, A.F. *s.*
Avondale Coll., Winchmore Hill
²Sowerby, L.E.
St. Anne's Coll., St. Annes-on-Sea
Stirling, N.
Sandyford Rd. S., Newcastle-on-Tyne
Walker, E.B. Lancaster Coll., W. Norwood
²Ward. D.G.
Central Council S., Weston-s.-Mare

Branston, N. *d.* 51 Ditchling Rise, Brighton
Chandler, W. Fenwick Coll., E. Dulwich
Falkner, E.M. *a.* Felix H., E. Dulwich
Graham, V.
High S., Brigstock Rd., Thornton Heath
Heddy, G.B. *e.* Private tuition
Lawrence, L. Girtonville Coll., Aintree
²Meates, M.H.
Teddington Coll., Upper Teddington
Price, C.M. *s.d.*
Montpelier Coll., Budleigh Salterton
Reeves, D.M. *d.*
Brynmor High S., Littlehampton
Sehofield, H. St. Andrew's Hall, Southport
Wain, H.L.H. St. Edmundsbury, Cardiff
White, M.O.
Westmorland Rd. S., Newcastle-on-T.

Athron, J.E. St. George's H., Doncaster
²Bevan, E. St. Maur Coll., Chepstow
Canney, A.J. Private tuition
²Collard, G.L.P.
Central Council S., Weston-s.-Mare
²Collings, G.M. Private tuition
Cooke, M.E.
St. Anne's Coll., St. Annes-on-Sea
Fail, J.B.
Westmorland Rd. S., Newcastle-on-Tyne
²Hayes, E.L.
Stamshaw Council S., Portsmouth
Ingamells, E.F.
High Trees Coll., Bournemouth
Jowsey, A.L. Arundel H., Scarborough
King, H.E. Down End, Clifton
Parry, F. Landsdowne H., Llandudno
Thorman, G.L.
Devonshire Rd. S., Forest Hill
Waters, E.R.M.
Handfield Coll., Waterloo, L'pool
Winger, K.V. *d.*
Licensed Victuallers' Girls' S., S.E.

Adamson, N.A. Prospect H., Stechford
Allen, D.C.M.
Devonshire Rd. S., Forest Hill
Allison, E.L. *d.* Haughton School, York
Balding, W.M. Fairfield H., E. Dereham
Beaumont, A. *d.*
St. Catherine's High S., Bow
Belcher, D.S. Temple Square S., Aylesbury
Christopher, N. Penpol Girls' S., Hayle
Flood, E.S. St. Paul's Girls' S., Chatham
Gibbs, H.M. Private tuition
Golby, G.M. Normanton, Brighton
²Hughes, W.N. St. Margaret's, Cardiff
Labey, E.G. *s.*
Ashton H., St. Clements, Jersey
Manson, M. *d.*
Canning St. Council S., Benwell
Marshall, B.L. *d.* Kenilworth S., Ealing
Maxted, M.G. *s.d.*
Edgehill Girls' Coll., Bideford
Pollard, A.M. Penventon S., Redruth
Pomeroy, C.M.
Montpellier Coll., Budleigh Salterton
Reed, E. Richmond High S., Liscard
Slingsby, M.F.
Royal Masonic Inst., Clapham Junction
²Smith, A.M. High S., for Girls, Wells
Wiltshier, R.K. The Magnolias, Southsea
Windsor, A. Brooklyn H., Wellington, Salop

Arnold, F.A. *d.* Sunfield H., Wellington
Barker, M. St. Andrew's Hall, Southport
Burn, I. Stoke Public Girls' S.
Connard, M. *e.d.*
St. Andrew's Hall, Southport
Edwards, M. Norma S., Waterloo, L'pool
Fairley, F. Huntcliffe H., Harrogate
Ford, K. Hemdean H., Caversham
Fulton, M.B. *e.* Private tuition
Harston, M.E. *d.*
Valley Bridge H., Scarborough
²Hodgson, A.F. Felix H., E. Dulwich
Lawry, N. *s.* Penpol Girls' S., Hayle
²Lippiatt, K. Selwood S., Frome
Lye, E.L.M.V.
Royal Masonic Inst., Clapham Junction
Mytton, C.
Woodville, Cotham Park, Bristol
Saunders, S.M.
Windsor High S., Wavertree, L'pool
Tinkler, J.M. *s.a.* Lonsdale H., Norwich
Wells, E. Shrewsbury H., Hove
Williams, K.M.
Fitzroy Coll. S., Fitzroy Square, W.

Birdsall, E.G. Arundel H., Scarborough
Brand, M.G. Haughton S., York
Dyer, F.E. *e.a.*
Central Council S., Weston-s.-Mare
Griffiths, D.E Marist Coll S., Paignton
²Herbert, F. Broadfield S., Rochdale
Northcombe, M. St. Olave's, Taunton
Ransley, C.M. Hemdean H., Caversham
Recland, E.M.
Licensed Victuallers' Girls' S., S.E.
Saunders, A.F. Grovemount, Muswell Hill
²Seeley, M.P. Private tuition
Smith, N.C. Private tuition
Taylor, M.F. Essex H., Saltash

Anderson, I.A. *d.* West H., Scruton Bedale
Ballad, E.M. Temple Square S., Aylesbury
Calvert, P.C. Colville H., Eastbourne
²Carver, M.G. Private tuition
Child, S.V. *s.e.* Norma S., Waterloo, L'pool
Colmer, M.H. *s.* Grosvenor H. Cricklewood
Couldridge, D.
Edgehill Girls' Coll., Bideford
Deadman, M.D.
Brickwood Lodge S., Tonbridge
Foxton, A.M. Abbey H., Selby
Head, F.R.
Holmwood Coll., Westcliff-on-Sea
²Johnson, M.K.
Licensed Victeallers' Girls S., S.E.
Johnson, N. Ivy H., Hanwell
Lowson, I.
Royal Masonic Inst., Clapham Junction
Payn, D. *d.* Breakspear Coll., Brockley
Piper, I.M. *e.* Granville Coll., W. Croydon
Robertson, F. Norma S., Waterloo, L'pool
Ross, A.I.
Sandyford Rd. S., Newcastle-on-Tyne

GIRLS, 3RD CLASS PASS—*Continued.*

²Truscott, W.G. Private tuition
Walder, F.A. Colville H., Eastbourne
²Warne, L.M. Stamshaw Council S., Portsmouth
Webber, H.V. Felix H., E. Dulwich

Anderson, D.W. HighS. forGirls, Wanstead
Andrews, Y.B. Cambridge H., Camden Rd., N.
Buckley, M.M. *e.a.* St. Catherine's High S., Bow
Butt, W. *d.* Olton College
Dunford, L.I. *d.* Alexandra Coll., Shirley
Hebden, D. Arundel H., Scarborough
Hodder, G. Selwood S., Frome
Joyner, N. *d.* Leslie H., Churchfields, Cheshunt
Mullius, N.M. Highfield S., Croydon
Peace, R.J. *g.* Royal Masonic Inst., Clapham Junction
²Slight, M. Academy, Crewe
Smith, P.I. *s.* Girls' High S., Aylesbury
Stephens, D. *a.* Vauxhall S., St. Helier
Tilley, A. Ashburne H., Chepstow
Wiltshire, L. St. Elmo's Coll., Totton
Wood, N. St. Andrew's Hall, Southport
Wright, E. W. Jesmond Council S., Newcastle-on-T.

²Bordier, K.E. Ellerker Coll., Richmond
Chambers, M. Licensed Victuallers' Girls' S., S.E.
Davis, L. SalisburyRd.Girls'S., Plymouth
Edwards, J.B. Private tuition
Ferrand, E.M. *s.* Bridge H., Sandbach
²Grindey, E. Normacot Church Girls' S., Longton
²Hale-Stephens, M. St. Maur Coll., Chepstow
Horne, D. *f.* ValleyBridge H., Searborough
Knowles, E.M. Fairhaven, Batheaston, Bath
Lamin, R.U. Temple Square S., Aylesbury
Maedonald, M.L. Private tuition
Maywhort, N. Academy, Crewe

Noble, W.D. Arundel H., Scarborough
Stathers, L. *d.* Malvern S., Beeston Hill, Leeds
Wager, D. 21 Avenham Lane, Preston
Wild, E.M. Private tuition
Wright, G.M. Private tuition

Bell, E. Canning St. Council S., Benwell
Bispham, G Academy, Crewe
Cubitt, D.J. Private tuition
Phillips, A. St. Maur Coll., Chepstow
Price, F.E. 7 Henry Street, Newbridge
Redding, D.V. Fairlight S., Southsea
Sheen, B.W. Lee College, Eastbourne
²Steel, D. Clark's Coll. Girls'S., BrixtonHill
Wilks, F.B. Harley H., Hereford
Young, E.R. St. Clare S., Southwick

Blood, A.M.D. Private tuition
Brown, M.A. Lee College, Eastbourne
Grenham, H.M. Conway H., Farnborough
Harse, D.L. Central Council S., Weston-s.-Mare
Heywood, F.C. *e.* Edgehill Girls' Coll., Bideford
Lockey, L. Ashburne H., Chepstow
Potter, E.W. St. Catherine's High S., Bow
²Robertson, I. Private tuition
Sykes, G. Broadfield S., Rochdale
Torode, E.M. Melbourne Coll., Thornton Heath

Aitkin, A.E. St. Maur Coll., Chepstow
²Brown, B. Pupil Teacher Centre, Ilkeston
Hardy, G.M. Arundel H., Scarborough
²Reading, V.A. Buckingham Place Acad., Landport
Robson, M.A. *a.* Westmorland Rd. S., Newcastle-on-Tyne
Smith, H.M. Woolston Ladies' Coll., Southampton
Tozer, G. Stoke Public Girls' S.
White, C.D. Park Coll., Northumberland Park, Tottenham

Goodman, G.C. Queen's S., Cliftonville, Margate
Gumbrell, A.E. Stoke H., Guildford
Kühlenthal, D.C. Kenilworth S., Ealing
Parsons, O. Private tuition
Stimpson, M.B. Fairfield H., E. Dereham
Walker, M.H. Breakspear Coll., Brockley

²Fanshawe, G.M. Licensed Victuallers' Girls' S., S.E.
Hunter, A. CanningSt.CouncilS., Benwell
Redfern, A.L. *s.* Abbeyfield S., Derby
Taylor, A. *s.* Girls' S., Promenade, S. Shore, B'pool

Dawe, A. SalisburyRd.Girls'S., Plymouth
Fleming, M.N. St. Maur Coll., Chepstow
Jackson, M. Belgrave Terrace S., Huddersfield
Jenkins, A.M. Summerfield Hall, Maesycwmmer
Seyers, R.E. Maindee Lawn S., Newport
Windrum, H.M. Alwyne Coll., Canonbury

Betenson, M.H. Buckingham Place Acad., Landport
Cain, B.F. Modena H., Ealing
Clarke, A. St. Edmund's S., Hunstanton
Davy, G.E. *d.* Valley Bridge H., Scarborough
²Hughes, M. The Laurels, Walsall
Manuelle, P.L. Private tuition
Moore, D. Marist Coll. S., Paignton
Searle, D.V. Cromwell H., Patricroft
Vickers, E.A. *s.* Froebel H., Worthing
Waring, L.D. Montpellier Coll., Budleigh Salterton
Watson, M. Broadfield S., Rochdale

Hall, I. Prospect H., Steelford
Smith, A.M. Bleak H., Brentwood
Springford, A. Parnella H., Devizes

Broach, L.G. Penpol Girls' S., Hayle
Charlton, E. CanningSt.CouncilS., Benwell
de Meza, A.C. Milton H., Highgate
Duke, V.E.M. Salisbury H., Plymouth

Farwell, H.D.I. High Trees Coll., Bournemouth
King, E.W. St. Edmund's S., Hunstanton
Pidgeon, A.E. St. Paul's Girls' S., Chatham
²Restall, A. Stamshaw Council S., Portsmouth
Toukin, D.M. Ellesmere Coll., S. Norwood

Godfrey, B.M. Parnella H., Devizes
²Martin, M. Private tuition
Townend, D.B. 4 Glebe Villas, Mitcham

Cumberland, D.F. EllerkerColl., Richmond
²Durnell, M.E. Private tuition
Francis, D. High S., Brigstock Rd., Thornton Heath
Griffiths, M. Summerfield Hall, Maesycwmmer
Hobbs, D.M. Arundel H., Scarborough
Millman, I. Stoke Public Girls' S.
Radford, M.C.A. Marist Coll. S., Paignton
Thomson, E. Girtonville Coll., Aintree

Gibson, N. Derby Institute for Girls
Potts, G.M. The Limes, Buckhurst Hill
Roberts, L. Lansdowne H., Llandudno
Smale, E. Stoke Public Girls' S.
Smith, F.J. ChatwinH., Hurworth-on-Tees
Whittle, E. 21 Avenham Lane, Preston

²Hannon, M.J. Skerry's Coll., Bold St., L'pool
Lander, D.L. EvelynHighS., Up.Holloway
Matthews, E. Ystrad H., Newport
Morehen, E.M. Milton H., Highgate
Palmer, C.H. Brook Green Coll., W.
Richmond, A. Huntcliffe H., Harrogate
Stuart, M. Summerland S., Richmond

Day, E.G.F. Lynton H., Portsmouth

²Ablin, E. Private tuition
Sheppard, F.M. Licensed Victuallers' Girls' S., S.E.

Daere, L. Haughton School, York
Ross, D. Les Marais High S., Fauvre La Rocque, Jersey
²Waugh, M. 21 Avenham Lane, Preston

LOWER FORMS EXAMINATION.—PASS LIST, CHRISTMAS, 1906.

BOYS.

Aarons, A. Great Ealing S., Ealing
Adams, R.G.H. Maida Vale S., W.
Adeler, E.E. New Brighton High S. for Boys
Akhurst, N.W. Sandwich School
Albin, N. High S., South Shore, Blackpool
Allcroft, F.R. Buckingham Place Acad., Landport
Allen, C.B. High S., Colomberie, Jersey
Allen, E.S. High S., Colomberie, Jersey
Allen, J.A. Licensed Victuallers'S., Lambeth
Allen, R.E. The College, Weston-s.-Mare
Allwood, J.T.F.D. Ivel Bury S., Biggleswade
Amos, C. Margate Comm. S.
Amos, H. Crompton S., Southend-on-Sea
Amos, W. Sandwich School
Anderson, D.V. Eton H., Southend-on-Sea
Ansdell, H.J. New Brighton High S. for Boys
Appleyard, G.J. Gram. S., Scarboro'
Archer, G.E.T. Eton H., Southend-on-Sea
Arenberg, M.R. Eton H., Southend-on-Sea
Ash, T.G. Sandwich School
Atkins, J. Highfield S., Chertsey
Ayres, S. WescottRd.CouncilS., Wokingham
Badcock, R. Mary St. House, Taunton
Bailes, F. Eversley S., Stamford
Bailey, A. Parnella H., Devizes
Baines, J.A. The College, Cherwell, Leeds
Baldwin, R. St. Leonards Coll. S.
Bamfield, V.H. All Saints' Choir S., Clifton
Barber, F. Gram. S., Wallington
Barber, M. New Coll., Harrogate
Barclay, C.L. Bailey S., Durham
Barker, C.W. Gram. S., St. Anne's-on-Sea
Barker, F. Westbury H., Southsea
Barnes, G.W. Endcliffe Coll., Sheffield
Barnes, H.C. Gram. S., Shoreham
Barns, V.G. Gram. S., Shoreham
Bartlett, D. Gram. S., Streatham
Bartlett, D.J. Bracknell College
Bastin, S.S.R. Hope Lodge S., Bexley Heath
Bates, C.C. Bailey S., Durham
Bates, C.N. Walsall Comm. Coll.
Bates, F.W.B. Cambridge H., Camden Road, N.
Baxter, A.J. Cambridge H., Cliftonville, Margate
Bebbington, F.S.C. St. George's Coll., Wimbledon

Becker, W. Jersey Modern S., St. Helier, Jersey
Beckwith, A.H. Warner's Coll., Parkshot, Richmond
Beesley, R.D. Clifton Coll., North Shore, Blackpool
Bennison, J.H. Scorton Gram. S.
Bentley, A.M. The Western Coll., Harrogate
Bentley, J.A.T. Gram. S., St. Anne's-on-Sea
Bentley, R.A. BradleyHighS., NewtonAbbot
Beswick, E.C. Kilgrimol S., St. Anne's-on-Sea
Bewley, H. Gram. S., St. Anne's-on-Sea
Bindon, L.W. Cliftonville Coll., Margate
Birchall, C. Private tuition
Bird, G. Ryde H., Ripley, Woking
Birtles, E.G. St. George's Coll., Wimbledon
Birtwistle, R. Barton S., Wisbech
Bisson, J. Oxenford H., St. Lawrence, Jersey
Blake, O.H. Cliftonville Coll., Margate
Blanch, A.T.H. Westcliff H., Norbreek
Blanckley, C.H. St. Leonards Coll. S.
Blinkhorn, W.A.H. Southdown Coll., Eastbourne
Blundell, L. High S., South Shore, Blackpool
Boehr, C.R. Richmond Hill School
Bolwell, J. Richmond Hill School
Boorman, R.C. Steyne School, Worthing
Botting, S. Ryde H., Ripley, Woking
Boundy, S.W. South Molton United S.
Bouts, H. Margate Comm. S.
Bowden, W. Highfield S., Chertsey
Bower, A.LeB. Harleston H., St. Lawrence, Jersey
Bowler, G.H. Drax Gram. S.
Bowles, J. Eversley S., Stamford
Boyd, W. Bailey S., Durham
Brackfield, J.A. Brunswick H., Maidstone
Bradford, J.L. Modern Coll., Harrogate
Bradley, A. Ryde H., Ripley, Woking
Braga, E.L. Anerley College
Bray, L. Richmond Hill School
Brazier, A.D.C. Gram. S., Shoreham
Brett, E.E. Brunswick H., Maidstone
Brigden, F.L. Taunton H., Brighton
Briggs, H.B. The College, Churwell, Leeds
Briscoe, R. Townley Castle S., Ramsgate

Brockway, E.U. The Terrace S., North Walsham
Brown, A.B.V. The Ferns, Thatcham, Newbury
Brown, E.F. Brunswick H., Maidstone
Brown, H.G.C. Comm. S., Weymouth
Brown, H.E. Gram. S., Shoreham
Brown, R.J. New Coll., Harrogate
Broxup, T. Margate Comm. S.
Bryant, G.W. Oxenford H., St. Lawrence, Jersey
Buckley, F.R. Steyne School, Worthing
Buller, A.C. Wellesley H., Gt. Yarmouth
Bulstrode, S.G. Blenheim H., Fareham
Bumpus, L.J. Crompton S., Southend-on-Sea
Burbidge, N. Eversley S., Stamford
Burchell, S. Margate Comm. S.
Burge, C.G. Cliftonville Coll., Margate
Burgess, C. Margate Comm. S.
Burgess, H.W. Gram. S., Sale
Burmi, A.E. Scorton Gram. S.
Burke, H.J. The Douglas S., Cheltenham
Burnand, C.L. Southdown Coll., Eastbourne
Burnes, V. High S. & Comm. Coll., Forest Gate
Burningham, G.H. Elmhurst S., Kingston-on-Thames
Burningham, S.C. Elmhurst S., Kingston-on-Thames
Burton, E.T.D. Hadfield H., St. Leonards-on-Sea
Buser, C.F. Anerley College
Bussey, J. Yarmouth College
Butt, J.G. Taunton School
Calvert, F. Gram. S., Searboro'
Calvin-Thomas, R.C.L. Taunton School
Campbell, E.E. St. George'sColl., Wimbledon
Cardy, R.J. Clair-Val, Faldouet, Gorey, Jersey
Cass, M. Steyne School, Worthing
Casson, P. Southport Modern S.
Castle, A. Sandwich School
Catchpole, P.A. Taunton School
Chamberlain, A.J. Bell's Gram. S., Coleford
Chandler, E.J. The Ferns, Thatcham, Newbury
Channing, G.H. Elmhurst S., Kingston-on-Thames

Chapman, F. Barton S., Wisbech
Chidson, H. Grammar S., Streatham
Clark, B. Froebel H., Devonport
Clark, G. Trafalgar H., Winchester
Clarke, A.P. Gram. S., Wilmslow
Clarke, H.B. Penketh School
Cleeve, E.H. Blenheim H., Fareham
Close, W.G. Brunswick H., Maidstone
Clowes, B. The Mount, Stoke-on-Trent
Cockerill, L.D.J. High S. & Comm. Coll., Forest Gate
Cole, I.A. Spencer Coll., Wimbledon
Colebrook, C.F. Grammar S., Streatham
Coleman, G.D. The Briary, Northwood
Collier, T.L. St. Dunstan's Coll., Margate
Collings, H.G. Licensed Victuallers' S., Lambeth
Collings, W. Kingsholme S., Weston-s.-Mare
Collins, S. Oxenford H., St. Lawrence, Jersey
Constantine, H.S. Southport Modern S.
Cook, C.N. Gram. S., Mutley
Coombs, A.W. Hope Lodge S., Bexley Heath
Coombs, W.H.E. Littleton H., Knowle
Cooper, L. Highfield S., Chertsey
Coppen, S.W. Southdown Coll., Eastbourne
Corin, T.E. Froebel H., Devonport
Corpe, H. Margate Comm. S.
Costello, G. Richmond Hill School
Cottle, S.J. Taunton School
Couch, O.P. The High S., Torquay
Coulthard, C.E. Beaconsfield, Weston-s.-Mare
Counsell, D.R. All Saints' Choir S., Clifton
Covell, H.C. Gram. S., Streatham
Cowie, J.D. Cliftonville Coll., Margate
Craig, G. High S., Market Drayton
Cranfield, F.L. Southport Modern S.
Crewe, A.S. High S., South Shore, Blackpool
Croasdale, J. HighS., SouthShore, Blackpool
Crocker, R. Gram. S., Mutley
Croecombe, R.J. South Molton United S.
Crofton, R.L. Bailey S., Durham
Cross, R.S.W. Taunton School
Cullen, S.A. Elm Bank S., Nottingham
Cumberland, H. Eversley S., Stamford
Cuninghame, J.P. Grosvenor S., Bath
Cunninghame, C.E.F. Bracknell College
Curwen, S. Kilgrimol S., St. Anne's-on-Sea
Danby, H.N. Gram. S., Scarboro'

BOYS, LOWER FORMS—*Continued.*

Dane, A. The Briary, Northwood
Dash, W.H. Taunton School
Davey, J. The School, Wellington Rd., Taunton
Davies, E.S. Arlington Park Coll., Chiswick
Davies, W.G. The College, Rock Ferry
Davis, H. Townley Castle S., Ramsgate
Daws, F. Ellesmere S., Harrogate
Dawson, M.F. Oxenford H., St. Lawrence, Jersey
Day, G.L. High S., Colomberie, Jersey
Decken, E.A. Raleigh College, Brixton
Delbanco, C. Southport Modern S.
Demierre, M.F.E. Gram. S., Wilmslow
Dennett, J. Trafalgar H., Winchester
Desmares, A.F. High S., Colomberie, Jersey
Diamond, G. Gram. S., Wallington
Dickinson, E. Blenheim H., Fareham
Dickson, McT. Middle S., Holsworthy
Dingley, J.L. Elmhurst S., Kingston-on-Thames
Dixon, B. The Western Coll., Harrogate
Doble, C.T. Taunton School
Dodge, C.E. Gram. S., Devizes
Dowding, C.A.L. The College, Weston-super-Mare
Dowling, A.S. Oxenford H., St. Lawrence, Jersey
Down, H.H. Jersey Modern S., St. Helier, Jersey
Down, J.H. South Molton United S.
Drake, S.E. Gram. S., Devizes
Drane, D.A.C. Crafnant S., Buckhurst Hill
Drinkwater, W. Hanley Castle Gram. S.
Dryerre, R.H. Taunton School
Dubuis, H.F. Bracknell College
Dunn, A.R. Modern S., Gravesend
Dunn, W.T. Chaloner's S., Braunton
Dunnett, C.H. Modern S., Gravesend
Dunstall, A.J. Modern S., Gravesend
Earle, K.L. The College, Weston-s.-Mare
Easton-Cook, A.E. Gram. S., Shoreham
Eccles, J.T. Drax Gram. S.
Eckersley, R.H. Gram. S., St. Anne's-on Sea
Edells, C. Margate Jewish College
Eden, H. Scorton Gram. S.
Edridge, A.H. High S., Brentwood
Elce, H. Lancaster Coll., Morecambe
Elder, R.I. Sherwood S., Woolwich
Elliott, F.C. Chaloner's S., Braunton
Ellis, C.O. Froebel H., Devonport
Ellis, J.R. Middle S., Holsworthy
Emery, W.H. Taunton School
Entwistle, S.V. Cliftonville Coll., Margate
Essex, A.C. Richmond Hill School
Etheridge, A.H. Southampton Boys' Coll.
Evans, L.H.P. St. Leonards Coll. S.
Eydmann, A.H. Arlington Park Coll., Chiswick
Faed, J.G. Clair-Val, Faldouet, Gorey, Jersey
Fairlie, W. Gram. S., Shoreham
Fane, S.W. Wycliffe Coll., Littlehampton
Feldwicke, J.D. Gram. S., Shoreham
Felgate, R.S. The Briary, Northwood
Few, B.S. Yarmouth College
Field, W.E. St. Dunstan's Coll., Margate
Figgins, C.J. Gram. S., Devizes
Filleul, D.P. Jersey Modern S., St. Heliers, Jersey
Fish, A.R.J. All Saints' Choir S., Clifton
Fishley, T.J. Gram. S., Mutley
Fletcher, N.R. Southampton Boys' Coll.
Florey, R.H. Taunton School
Ford, G. Evelyn High S., Up. Holloway
Fox, H.S. New Coll., Harrogate
Fox, P.W. Weybridge Collegiate S.
Frampton, H.L. Steyne School, Worthing
Francis-Hawkins, A.J.S.M. Private tuition
Freedman, A. Great Ealing S., Ealing
Freeman, F. Ryde H., Ripley, Woking
French, S.H. Raleigh College, Brixton
Freund, E.W.T. Gram. S., Wallington
Frost, G.J. St. George's Coll., Wimbledon
Fulljames, L.J. Modern S., Gravesend
Gammon, E.B. Taunton School
Gardner, J.F.G. Elmhurst S., Kingston-on-Thames
Garner, E.F.A. Crafnant S., Buckhurst Hill
Garner, L.H. Comm. S., Weymouth
Gaud, D.H. Froebel H., Devonport
Gayton, G.W. South Molton United S.
Gibson, A.D. St. George's Coll., Wimbledon
Gilbert, C.M. Taunton School
Gilbert, E.C. Barton S., Wisbech
Gilbert, H. Comm. S., Brewer St., Maidstone
Gilbert, H.R. Taunton H., Brighton
Gill, G.G. Comm. S., Weymouth
Gill, M. Kilgrimol S., St. Anne's-on-Sea
Gillard, J.O. Licensed Victuallers' S., Lambeth
Glass, D.M. Pierremont Coll., Broadstairs
Glasson, G. Charlecote School, Worthing
Glover, J. Blenheim H., Fareham
Goddard, E.A. Elmhurst S., Kingston-on-Thames
Goddard, H.E. Wellesley H., Gt. Yarmouth
Godeaux, C. Jersey Modern S., St. Heliers, Jersey
Godolphin, V.O. Trafalgar H., Winchester
Goldhill, C. Morgate Jewish College
Goldsack, E.R. Charlton Acad., Bath.
Goldstein, D. Great Ealing S., Ealing
Goodall, F.W. Bracknell College
Gordon, R.H. Gram. S., Blackpool
Gracie, G.B. New Brighton High S. for Boys
Gracie, J.J. New Brighton High S. for Boys
Graff, R.T. Elmhurst S., Kingston-on-Thames
Grant, A.J.S. Charlecote S., Worthing
Grave, A.H.L. Gram. S., Wallington
Graves, A.G. Froebel H., Devonport
Gray, F. Elm Bank S., Nottingham
Green, A.E.S. All Saints' Choir S., Clifton
Green, G.D. Grosvenor H., Wokingham
Greenhous, A.F. Hanley Castle Gram. S.
Greenwood, H.W. New Coll., Harrogate
Greer, G.J. Eton H., Southend-on-Sea
Griffiths, J.E. Cliftonville Coll., Margate
Grisdale, M. Southdown Coll., Eastbourne
Grogan, E.G. Gram. S., Shoreham
Gush, W.G. Taunton School
Guy, R.H. Ivel Bury S., Biggleswade
Haigh, T.N. Aylwin Coll., Arnside
Haines, A. Charlecote S., Worthing
Hairsine, W.H. Drax Gram. S.
Halfhide, A.J.W. High S., Brentwood
Hall, H.G. Mossley Hall S., Congleton
Hall, H.H.M. Ivel Bury S., Biggleswade
Hall, N.B. Scorton Gram. S.
Hallett, H. Chaloner's S., Braunton
Halliwell, A.C. Montauban, St. Anne's-on Sea
Halliwell, B.T. Gram. S., St. Anne's-on-Sea
Halliwell, J.L. Gram. S., St. Anne's-on-Sea
Halstead, R. Kilgrimol S., St. Anne's-on-Sea
Hamani, E. Townley Castle S., Ramsgate
Hamlin, S.J. Jersey Modern S., St. Helier, Jersey
Hammond, J.C. Southport Modern S.
Hamon, C. Jersey Modern S., St. Helier, Jersey
Hamon, E. Jersey Modern S., St. Helier, Jersey
Hardcastle, A.H. The College, Churwell, Leeds
Harden, A. Southdown Coll., Eastbourne
Harden, N. Sandwich School
Hardwick, H. The College, Churwell, Leeds
Harris, D. Brunswick H., Maidstone
Harris, R.C. Licensed Victuallers' S, Lambeth
Harrison, R. St. Dunstan's Coll., Margate
Hartridge, L.B. Brunswick H., Maidstone
Hartshorne, N.H. Glencoe, Erdington
Harvey, F.H. Wellington School, Deal
Harvey, G. All Saints' Choir S., Clifton
Harvey, G.M. Gram S., St. Anne's-on-Sea
Haslegrave, C.F.P. Eversley S., Southwold
Hastie, A.B.P. Southport Modern S
Hatcher, H.B. Taunton School
Hawkins, R.C. Wellington S., Deal
Hayes, B.L. Kilgrimol S., St. Anne's-on-Sea
Hayward, H. Boys' Prep. S., Mote Rd., Maidstone
Heasell, W. Boys' Prep. S., Mote Rd., Maidstone
Heavens, S.J. Licensed Victuallers' S., Lambeth
Helleur, S.G. Harleston H., St. Lawrence, Jersey
Hemphrey, M.B.K. Brunswick H., Maidstone
Hender, A. Tothill Preparatory S., Plymouth
Henry, H. Eton H., Southend-on-Sea
Henshall, E.R. Mossley Hall S., Congleton
Herbert, A. Barton S., Wisbech
Hetherton, A. Gram. S., Scarboro'
Hewens, F.A. Uxbridge Preparatory S.
Hewitson, N.D. Bailey S., Durham
Hibbs, G.H. Sandwich School
Hick, C.A. Taunton School
Hill, E.A. Leigh Hall Coll., Leigh-on-Sea
Hill, G.H. Whoof House Coll., Formby
Hill, G.R. New Brighton High S. for Boys
Hill, H.D. Mossley Hall S., Congleton
Hillbrook, B.F. Charlecote School, Worthing
Hincks, R.H. Hanley Castle Gram. S.
Hinds, W.G. Waterlooville Coll., Cosham
Hindson, W. Grosvenor Coll., Carlisle
Hirst, G.H. New Coll., Harrogate
Hiscock, A.W. Gram. S., Devizes
Hislop, A.H. Gram. S., Shoreham
Hodding, H.E.A. Highfield S., Chertsey
Hodges, C.S.J. Richmond Hill School
Hodgkinson, P. Penketh School
Holden, H.F. Glencoe, Erdington
Holliday, E.F. Leigh Hall Coll., Leigh-on-Sea
Hollingshurst, H. Richmond Hill School
Holman, B. Middle S., Holsworthy
Holt, H.D.G. Cambridge H., Camden Rd., N.
Honeywell, F.T. Ryde H., Ripley, Woking
Hopton, W. Edgbaston Academy
Hopwood, L.S. Highfield S., Chertsey
Hore, A. Colebrook H., Bognor
Horne, J.L. Hutton Gram. S.
Horne, R.C. Handel Coll., Southampton
Horsfall, E. Lancaster Coll., Morecambe
Horton, C.A.E. Saham Coll., Watton
Hosking, S.H. Froebel H., Devonport
Hotton, C.W. St. James's Coll. S., St. Heliers
Houghton, A.T. Grosvenor S., Bath
Howard, H. Spencer Coll., Wimbledon
Howard, P.E.N. Taunton School
Hughes, E. St. John's Coll., Brixton
Hughes, F.C. Comm. Coll., Acton
Hughes, S.L. Taunton School
Humpheries, H.R. Ellesmere S., Harrogate
Hunn, D. Ryde H., Ripley, Woking
Hunt, A.J. The College, Weston-s.-Mare
Huntley, W.J. Elmhurst S., Kingston-on-Thames
Hutchings, D.J. Comm. S., Weymouth
Hutchings, W.R. St. Winifred's S., Torquay
Hynes, A.J. Elm Bank S., Nottingham
Ingmire, F. Margate Comm. S.
Ireland, L.H. St. Winifred's S., Torquay
Ivers, H.F. Gram. S., Birkdale
Jacobs, J.H. Bradley High S., Newton Abbot
Jaggar, R. New Coll., Harrogate
Jaggé, E.A. Cliftonville Coll., Margate
James, C.E. Taunton School
Jameson, W.R. Grosvenor S., Bath
Jarvis, A.C.T. Modern S., Gravesend
Jeffery, J.H. Gram. S., Sale
Jelffs, W.F. Elmhurst S., Kingston-on-Thames
Jenkin, J. Montague H., Streatham
Jenne, S.F. High S., Colomberie, Jersey
Jenner, P.A. Brunswick H., Maidstone
Jennings, M. Saham Coll., Watton
Jerome, F.E. Boys' Coll. S., Aldershot
Jinman, G.G.W. Eton H., Southend-on-Sea
Joffe, D. Great Ealing S., Ealing
John, I.G. New Coll., Harrogate
Johnson, C.J. Licensed Victuallers' S., Lambeth
Johnson, C.S. Barton S., Wisbech
Johnson, R. St. Dunstan's Coll., Margate
Johnson, W. Homeleigh, Downham Mkt.
Johnston, W.C. Grosvenor Coll., Carlisle
Jones, H.F.C. Eversley S., Southwold
Jones, H.F.H. Reagill H., Bath
Jones, W.H. Southport Modern S.
Kappey, C.F.G. Gram. S., Shoreham
Kean, C.P. Modern S., Gravesend
Kean, J.S. Modern S., Gravesend
Kelleway, M.J. Gram. S., Shoreham
Kenward, H.L. St. Leonard's Coll. S.
Kerslake, S. South Molton United S.
Key, L.H. Taunton School
Kimfull, F.W. Hadfield H., St. Leonards-on-Sea
King, P.N. New Coll., Harrogate
Kingsbury, E.I. Elm Bank S., Nottingham
Knight, G.R.F. St. Catherine's Coll., Richmond
Knott, H.P. Littleton H., Knowle
Labey, R.G. St. James's Coll. S., St. Helier
Laidman, T. Handel Coll., Southampton
Laird, R.G. Arlington Park Coll., Chiswick
Lakeman, R.N. Uxbridge Preparatory S.
Lander, J.M. Evelyn High S., Up. Holloway
Lane, S.W. Hanley Castle Gram. S.
Lang Browne, A. The School, Wellington Rd., Taunton
Larkin, L.W. High S., Brentwood
Last, W.L. Gram. S., Shoreham
Laurens, A.J Jersey Modern S., St. Helier
Lawrence, E. Southampton Boys' Coll.
Laws, H.N. Licensed Victuallers' S., Lambeth
Laws, W.B. Licensed Victuallers' S., Lambeth
Lea, W.A. The College, Rock Ferry
Leaberry, P. Eversley S., Stamford
Leader, F. The Ferns, Thatcham, Newbury
Leak, E.O. Yarmouth College
Le Cornu, J.B. Jersey Modern S., St. Helier
Lee, H.J. Highfield S., Chertsey
Lees, E. Southport Modern S.
Lees, E.H.R. The College, Rock Ferry
Lee-Wood, T.E. de B. Leyland H., Southport
Le Gresley, C.A. High S., Colomberie, Jersey
Le Gresley, F.H. Gorey Comm. S., Jersey
Le Gros, J.B. Jersey Modern S., St. Helier
Leheup, E.P. Cliftonville Coll., Margate
Le Huray, W.F. Southampton Boys' Coll.
Le Sueur, C.S. High S., Colomberie, Jersey
Lewtas, H.A. Gram. S., Sale
Liddle, A. Froebel H., Devonport
Linney, L.A. Gram. S., Shoreham
Ling, H.S. Saham Coll., Watton
Llywarch, G. Richmond Hill School
Lockhart, M.H. Gram. S., Shoreham
Lofts, A.F. Yarmouth College
Long, B. Winchester H., Bristol
Long, P. Handel Coll., Southampton
Lord, C. Aylwin Coll., Arnside
Lord, N.N. Anerley College
Loveridge, A.R. Trafalgar H., Winchester
Lowther, J.A. Gram. S., Wilmslow
Lucas, W.V. Gram. S., Devizes
Lunn, E.M. Drax Gram. S.
Lupton, C. The Western Coll., Harrogate
Lupton, F. The Western Coll., Harrogate
Lush, G.H. Grosvenor S., Bath
Mackay, W.H. Oxenford H., St. Lawrence, Jersey
Mackenney, W.S. Jersey Modern S., St. Helier
Mackenzie, J.S. Steyne S., Worthing
Mackenzie, J.W.G. Trafalgar H., Winchester
Mackley, F.N. Modern S., Gravesend
Macpherson, D. Margate Comm. S.
Madgwick, G. Spencer Coll., Wimbledon
Manning, H. Licensed Victuallers' S., Lambeth
March, J.F. Licensed Victuallers' S., Lambeth
Marchaston, A.L. Private tuition
Markland, H. High S., South Shore, Blackpool
Marley, C. Brunswick H., Maidstone
Marsh, R. Wycliffe Coll., Littlehampton
Marshall, A.G. Taunton School
Marshall, H.J. All Saints' Choir S., Clifton
Marshall, H.J. High S., South Shore, Bl'kpool
Martin, W. Crompton S., Southend-on-Sea
Matheson, F.S. Highwood H., Liskeard
Matthews, F.W. Ivel Bury S., Biggleswade
McMillan, B.L. Charlton Acad., Bath
McTurk, H.A.D. High S., Brentwood
Middleton, B.G. Elmhurst S., Kingston-on-Thames
Miell, H.S. Handel Coll., Southampton
Miller, R.C. High S., Brentwood
Minchin, H.N. Gram. S., Shoreham
Minnis, W.J. Raleigh Coll., Brixton
Minshall, F.B. High S., Market Drayton
Minty, F.W. Licensed Victuallers' S., Lambeth
Mohan, T.G. St. Winifred's S., Torquay
Monckton, W.E. Comm. S., Brewer St., Maidstone
Monk, R.R. St. James's Coll. S., St. Helier
Montgomery, G.J. Mary St. H., Taunton
Moore, E.E. High S. & Comm. Coll., Forest Gate
Moore, J.H.L. Brean H., Weston-s.-Mare
Moore, P.P. Taunton School
Moores, D. Gram. S., Blackpool
Morris, S.L. The Briary, Northwood
Morrison, MacR.D. Taunton School
Mortimer, A.N. Gram. S., Blackpool
Morton, R.J. The Briary, Northwood
Moses, E.W. Argyle H., Sunderland
Mossop, F.H. Clair-Val, Faldouet, Gorey, Jersey
Mossop, T. Ellesmere S., Harrogate
Mumford, A.L. Comm. S., Weymouth
Musgrave, G.G. Taunton School
Myerscough, J. Lancaster Coll., Morecambe
Nalder, E.S. Grosvenor S., Bath
Naylor, T. Southport Modern S.
Newberry, H.J. Taunton H., Brighton
Newman, J.C.F. Private tuition
Newstead, K.L. The Western Coll., Harrogate
Newton, E.S. Southport Modern S.
Nicholson, H.H. Elmhurst S., Kingston-on-Thames
Nicolle, F.St. J. Clair-Val, Faldouet, Gorey, Jersey
Nixon, C. Evelyn High S., Up. Holloway
Norman, H. Brunswick H., Maidstone
Norman, H.A. Oxenford H., St. Lawrence, Jersey
Norman, J.G. Gram. S., Shoreham
Norman, R.F.H. Highfield S., Chertsey
Oakley, H.C. Blenheim H., Fareham
O'Brien, T.E.H. Penketh School
Ockmore, R.H. Licensed Victuallers' S., Lambeth
Okey, T.K.A.G. Licensed Victuallers' S., Lambeth
Oldreive, R.R. High S. & Com. Coll., Forest Gate
Oliver, H. Gram. S., Mutley
Olsen, J.B. Oxenford H., St. Lawrence, Jersey
Osgood, B.E. St. Winifred's S., Torquay
Osgood, S. Ryde H., Ripley, Woking
Oxley, O.L. Modern S., Gravesend
Page, J.R. Gram. S., East Finchley
Paige, F.W.H. Sandwich School
Palk, W.J. Gram. S., Mutley
Pallant, F.M. Modern S., Gravesend
Palmer, J. Private tuition
Parker, M.R. Cliftonville Coll., Margate
Parker, R.T. The Briary, Northwood
Parry, J.R. New Brighton High S. for Boys
Paton, J.E. King's Coll., Wimbledon
Payne, C. Anerley College
Payne, C.A. Lancaster Coll., Morecambe
Peacock, E.I. Scorton Gram. S.
Pearce, F. Reading Coll. S.
Pearson, G. Modern Coll., Harrogate
Peaty, L.F. Pierremont Coll., Broadstairs
Pedder, S.H. Gram. S., Sale
Pendock, J.C.T. Littleton H., Knowle
Penny, A.C. The College, Weston-s.-Mare
Penrose, E.F. Tothill Preparatory S., Plymouth
Peters, G.N. Hove High S.
Pettman, A.J. St. Dunstan's Coll., Margate
Pfaff, E. The College, Weston-s.-Mare
Phillips, E. Elmhurst S., Kingston-on-Thames
Phillips, H.S. Taunton School
Phipps, A.G. The College, Weston-s.-Mare
Pickford, J.W. Trafalgar H., Winchester
Pigg, A.E W. Grosvenor Coll., Carlisle
Pigg, R.W.P. Grosvenor Coll., Carlisle
Pink, R.T. Blenheim H., Fareham
Pinto, R. Maida Vale S., W.
Pitt, R.A. Hanley Castle Gram. S.
Pledge, D.E. St. Winifred's S., Torquay
Pledger, G.A. St. George's Coll., Wimbledon
Pleven, J.F. Parochial S., St. Clement's, Jersey
Pollard, F. St. Leonards Coll. S.
Pollitt, A. Gram. S., Wilmslow
Polwhele, D.E.B. Private tuition
Ponting, J.E. The Douglas S., Cheltenham
Pool, J.B. St. James's Coll. S., St. Helier
Poole, C. St. John's Coll., Brixton
Popplestone, A.H. Handel Coll., Southampton.
Porritt, W.H. Private tuition

BOYS, LOWER FORMS—*Continued.*

Portbury, N. Handel Coll., Southampton
Potter, C.W. Oxford H., Bexhill
Potter, H.A. St. George's Coll., Wimbledon
Poundall, W.A.L. King's Coll., Wimbledon
Poynter, C. Gram. S., Streatham
Pratt, D.W. Cliftonville Coll., Margate
Pratt, E.H. Elm Bank S., Nottingham
Preston, C.D. New Coll., Harrogate
Price, L.W. Taunton School
Priestwood, H.T.
Clair-Val, Faldouet, Gorey, Jersey
Prynn, N. Gram. S., Wallington
Pryor, W.D.N.F. Aylwin Coll., Arnside
Pullen, L.P. Winchester H., Bristol
Pulman, H.E.A. Southport Modern S.
Purser, P.W. Gram. S. Shoreham
Putland, A.K.
Hadfield H., St. Leonards-on-Sea
Pye, C.E. Comm. S., Weymouth
Pye, T.H. Taunton School
Quick, L.W. Trafalgar H., Winchester
Quillinan, M. Walsall Comm. Coll.
Race, E.R. Highfield S., Chertsey
Race, G.A. Highfield S., Chertsey
Ratcliffe, J. Clifton Coll., Harrogate
Rea, R.C. St. John's Coll., Brixton
Redman, D.W. St. Dunstan's Coll., Margate
Reeland, W.P.
Licensed Victuallers' S., Lambeth
Reeves, G.P. Modern S., Gravesend
Renison, H. Penketh School
Rich, A.G. Cliftonville Coll., Margate
Richards, A. Ryde H., Ripley, Woking
Richards, C.G. Southdown Coll., Eastbourne
Richardson, A.W. Steyne S., Worthing
Rimell, L.W. Hanley Castle Gram. S.
Rix, R.A. Gram. S., Shoreham
Rix, S.M. Gram. S., Shoreham
Robbins, G.F. Gram. S., Shoreham
Roberts, W.M. Cliftonville Coll., Margate
Robinson, A.H. Steyne S., Worthing
Robinson, G.C. Scorton Gram. S.
Rodber, A.B. Scorton Gram. S.
Rodwell, W.H. Cliftonville Coll., Margate
Romeril, A.J.
Harleston H., St. Lawrence, Jersey
Roper, W. Comm. S., Weymouth
Roques, F.C. Highfield S., Chertsey
Ross, R.O. Buda Coll., Aldrington, Hove
Rostern, J.N. The Briary, Northwood
Rowe, H.W. St. John's Coll., Brixton
Rumsey, J.W. Modern S., Gravesend
Russell, H. Licensed Victuallers' S., Lambeth
Russell, W.T. Belgrave Villa S., Lee
Rutley, H. St. George's Coll., Wimbledon
Salter, L.E. Southdown Coll., Eastbourne
Sams, A.W. Hanley Castle Gram. S.
Sampson, A. High S., South Shore, Blackpool
Sams, G.F. Hauley Castle Gram. S.
Sanders, M.A. Comm. Coll., Acton
Sandon, W.E. Ivel Bury S., Biggleswade
Sandwell, C.
Licensed Victuallers' S., Lambeth
Saphin, H.A. Steyne S., Worthing
Sargeant, D. Bracknell College
Saxby, R. St. Dunstan's Coll., Margate
Schreier, R.S. Gram. S., Shoreham
Scott, W. High S., South Shore, Blackpool
Seward, A.S. West Cliff S., Preston
Sewell, J. Gram. S., Sale
Shapland, N.H.
Hadfield H., St. Leonards-on-Sea
Shapley, G.T. St. Winifred's S., Torquay
Sharples, T.B.
High S., South Shore, Blackpool
Shave, J. Bradley High S., Newton Abbot
Shaw, A. Gram S., St. Anne's-on-Sea
Shaw, C.F. Private tuition
Shearman, P.H. Yarmouth College
Shelly, G.E. Anerley College
Shepherd, C.J.
The Ferns, Thatcham, Newbury
Shield, E. Penketh School
Shoppee, M.C. Cliftonville Coll., Margate
Short, P.F. Taunton School
Sim, C. Ryde H., Ripley, Woking
Simonsen, W.V. Colebrook H., Bognor
Sinden, C. Richmond Hill School
Slade, F. The Western Coll., Harrogate
Slater, J.A. Gram. S., Shoreham
Slaymaker, A.W. South Molton United S.
Slee, S.E. Middle S., Holsworthy
Smallwood, R.A. All Saints' Choir S., Clifton
Smart, G.U. Winchester H., Bristol
Smethurst, W.K.
Victoria Park S., Manchester
Smith, A.C. Weybridge Collegiate S.
Smith, A.S. Hanley Castle Gram. S.
Smith, D.C.
Elmhurst S., Kingston-on-Thames
Smith, E.P. The Terrace S., North Walsham
Smith, H. Gram. S., East Finchley
Smith, H.G. The Terrace S., North Walsham
Smith, H.W. Highfield S., Chertsey
Smith, J.L.W. Clifton Coll., Harrogate
Smith, L.C. All Saints' Choir S., Clifton
Smith, S.R.E. Yarmouth College
Smith, T.R. Cliftonville Coll., Margate
Sohier, H.L. High S., Colomberie, Jersey
Southall, P.E. Gram. S., Shoreham
Spray, R.W. All Saints' Choir S., Clifton
Squire, W. South Molton United S.
Stafford, A.E. Richmond Hill School
Stagg, H.C. Richmond Hill School
Stanford, H.J. Modern S., Gravesend
Stedman, C.R. Brunswick H., Maidstone
Steele, D. Cliftonville Coll., Margate
Stephens, L.T. Highbury Park S., N.
Stephenson, F. Barton S., Wisbech
Stevens, H. Spencer Coll., Wimbledon
Stevenson, J.K. Southdown Coll., Eastbourne
Stevenson, R.J. Gorey Comm. S., Jersey
Stewart, L.A. Oxford Coll., Waterloo
Stilwell, G. Grammar S., Streatham
Stinton, T.H.H.
Buckingham Place Acad., Landport
Strong, J.B. Gram. S., Devizes
Strong, J.M. Gram S., Devizes
Strube, S.C. Licensed Victuallers' S., Lambeth
Suttou, A.McA. All Saints' Choir S., Clifton
Swabey, J.A. Ryde H., Ripley, Woking
Sweet, R.R. Gram. S., Mutley
Sydenham, H. Mary St. H., Taunton
Syvret, C.S.
Oxenford H., St. Lawrence, Jersey
Tagent, H.W. Cliftonville Coll., Margate
Tanton, S.A. St. Leonards Coll. S.
Tapp, J.H.
The School, Wellington Rd., Taunton
Taylor, A.G. Glencoe, Erdington
Taylor, A.W. Barton S., Wisbech
Taylor, F.C. Gram. S., Scarboro'
Taylor, J.K. Gram. S., Scarooro'
Taylor, R.C. New Coll., Harrogate
Taylor, R.H. New Coll., Harrogate
Thomas, A. High S., Market Drayton
Thomas, A.E. Froebel H., Devonport
Thomas, E. Heaton High S., Newcastle
Thomas, M.E. Gram. S., Mutley
Thompson, G.V.
Elmhurst S., Kingston-on-Thames
Thompson, H. Spencer Coll., Wimbledon
Thorne, C.B. Bridge H., Sandbach
Thornhill, L.A.
Boys' Prep. S., Mote Rd., Maidstone
Thornley, G. Southport Modern S.
Tickle, R.N. Brunswick H., Maidstone
Tomlin, H.F. Brunswick H., Maidstone
Tomlin, J.D.
Boys' Prep. S., Mote Rd., Maidstone
Tomlinson, T.G. Drax Gram. S.
Tongue, C.C. Taunton School
Toulmin, J. West Cliff S., Preston
Townsend, H.J. St. Winifred's S., Torquay
Traise, E. Eversley S., Stamford
Tree, E.J. Brunswick H., Maidstone
Tregear, R.W. Colebrook H., Bognor
Tucker, S.L. The Ferns, Thatcham, Newbury
Tuffin, R. Gram. S., Shoreham
Tunnard, R. Barton S., Wisbech
Turner, H. Lancaster Coll., W. Norwood
Turner, S.C. Southdown Coll., Eastbourne
Turpin, C.F. Grosvenor S., Bath
Tyler, L.E. Castle Dene, Newport
Vallis, R. Clifford S., Beckington, Bath
Van de Ven, L. Trafalgar H., Winchester
Varley, E.C. New Coll., Harrogate
Vernon, C.H. Taunton School
Vickery, R.M. Taunton School
Wadbrook, W.H.E. Southampton Boys' Coll.
Wade, J.P. Modern Coll., Harrogate
Walker, J. Gram. S., Blackpool
Walker, J.H. Taunton School
Walling, R.V.
Tothill Preparatory S., Plymouth
Wallis, T. Modern S., Gravesend
Wallis, J. Elmhurst S., Kingston-on-Thames
Wallond, H.C.W.
Boys' Prep. S., Mote Rd., Maidstone
Wareham, S.W.
Bradley High S., Newton Abbot
Warne, F.E. St. George's Coll., Wimbledon
Warner, F.C.F. St. Aubyn's, Woodford Green
Warren, L. Homeleigh, Downham Mkt.
Warrington, E. Southport Modern S.
Washington, J.T. The Mount, Stoke-on-Trent
Watchorn, S. Eversley S., Stamford
Watkins, B.L. Bell's Gram. S., Coleford
Watson, A.M.McC. Gram. S., Wilmslow
Watson, J.O. Endcliffe Coll., Sheffield
Watson, L.R. Clifton Coll., Harrogate
Watt, A.W. The Briary, Northwood
Watts, H.A. Taunton School
Way, T. Taunton School
Way, W.E. Cliftonville Coll., Margate
Waymouth, W.H.L.
St. Winifred's S., Torquay
Weaver, S.G. Edgbaston Academy
Webb, E.C. Pierremont Coll., Broadstairs
Webb, W.E.K. The Downs S., Clifton
Webster, R.B. Gram. S., Birkdale
Wedge, W.W.
Bradley High S., Newton Abbot
Wells, W.S.,
Comm. S., Brewer St., Maidstone
Wemyss, F.D. King's Coll., Wimbledon
Westlake, J.H.
The School, Wellington Rd., Taunton
Weston, F. Brunswick H., Maidstone
Wheeler, L.McL. Mount Radford S., Exeter
Whellock, C.S. Gram. S., Shoreham
White, J.A. St. Dunstan's Coll., Margate
White, L.S. Reagill H., Bath
Whitehead, F.C.
The Western Coll., Harrogate
Whittaker, J.I.
High S., South Shore, Blackpool
Wickham, T.H. Cliftonville Coll., Margate
Wilcocks, E.E. St. Winifred's S., Torquay
Wild, J. Oxford Coll., Waterloo
Wildsmith, D. Rostrevor H., Folkestone
Wilkins, E.G. Taunton School
Willard, W.F. St. Leonards Coll. S.
Williams, R.T. Trafalgar H., Winchester
Williams, S.J. Catholic Gram. S., St. Helens
Willoughby, E.P. Taunton School
Wilson, A. Aylwin Coll., Arnside
Wilson, C. Comm. Coll., Acton
Wilson, C. New Coll., Harrogate
Wiltshire, W.G. Gram. S., Devizes
Wingfield, H.H. St. George's Coll., Wimbledon
Winship, A. Bailey S., Durham
Witting, S.M. Gram. S., Scarboro'
Womersley, P.M.
Southdown Coll., Eastbourne
Wood, C.E. Ellesmere S., Harrogate
Wood, H.E. Southport Modern S.
Wood, H.E. Penketh School
Wood, R.R. South Molton United S.
Wood, T.W. Catholic Gram. S., St Helens
Woodall, S.E. Aylwin Coll., Arnside
Woodruff, C.A. Sandwich School
Woodward, A.T. Taunton School
Woof, G.F. The Douglas S., Cheltenham
Woolford, F.H. Reading Coll. S.
Wren, F.C. Gram. S., St. Anne's-on-Sea
Wright, A.E. Southport Modern S.
Wright, H. Gram. S., Streatham
Wright, S. Gram. S., St. Anne's-on-Sea
Wright, W.G.H. Westbury H., Southsea
Wynne, A.C. New Brighton High S. for Boys
Yair, G.A. Taunton School
Young, S.F. Taunton School
Young, W. Cliftonville Coll., Margate
Young, W.H. Steyne S., Worthing

GIRLS.

Abbot, L. Abbey H., Selby
Abrahams, H.K.
Mansfield House Coll., Cliftonville, Margate
Acton, M.O. Westbourne H., Cowes
Adams, D. Froebel H., Worthing
Addison, M. Grimshaw St. British S., Preston
Albert, A. Grimshaw St. British S., Preston
Alcock, A.M. Glencoe, Erdington
Alcock, B.D. Brooklyn H., Wellington, Salop
Alderson, D. Salisbury Rd. Girls' S., Plymouth
Alexander, G.M.
Parochial S., St. Clements, Jersey
Allen, E. Frederick Place S., Weymouth
Allen, M.G. Warwick Coll., Brixton Hill
Allister, M.B. Girtonville Coll., Aintree
Alty, S. St. Andrew's Hall, Southport
Amy, O.U. St. James's Coll. S., Jersey
André, G.P. Cambourne S., Richmond
Andrews, E.Y. Greenfield H., Waltham Cross
Andrews, J. St. Elmo's Coll., Totton
Andrews, M.E.
Colne Valley S., Rickmansworth
Andrews, M.I. Ripley H., Barnet
Ansell, E.G. Alleyn Coll., Margate
Antill, N.F. Maindee Lawn S., Newport
Armstrong, E.
Heaton High S., Newcastle-on-Tyne
Armstrong, G. Grosvenor H., Wokingham
Arthur, M.C.
Strathmore H., St. Mary's, Jersey
Ascough, I.C. Oxford Coll., Gunnersbury
Ashcroft, W. St. Andrew's Hall, Southport
Ashpole, M. York House, Swanley
Ashton, J. St. Andrew's Hall, Southport
Ashton, M. St. Andrew's Hall, Southport
Ashton, R.
St. Anne's Coll., St. Annes-on-Sea
Attwood, A.M. Temple Square S., Aylesbury
Anger, G. Convent S., Newhaven
Austen, A. Clive Vale Coll., Hastings
Austin, G.M.S. Highfield, Wallington
Austin, M. Edgehill Girls' Coll., Bideford
Bacon, S. Endsleigh H., Colchester
Bagshaw, F.M. Castle Hall S., Northampton
Ball, C. Clark's College High S., Tufnell Park
Ball, M.J.F. Endsleigh H., Colchester
Balsdon, D. Kyuerton, Sefton Park, L'pool
Band, I. Blagdon, Eastbourne
Barber, E.D. Bleak H., Walsall
Barlow, M. Halcyon H., Congleton
Barnes, C. Buda Coll., Aldrington, Hove
Barnet, M. Grimshaw St. British S., Preston
Barron, G.M. Steyne S., Worthing
Barry, E.M. Larchmount Hall, Yatton
Barry, F.A. Larchmount Hall, Yatton
Bartram, E.J. Endsleigh H., Colchester
Basham, M. St. Maur Coll., Chepstow
Batchelor, U.
Nantly House Coll., Heston-Hounslow
Baylis, N.E. Dresden H., Evesham
Belisha, B. Bestreben High S., Brondesbury
Belshaw, Elizabeth
St. Andrew's Hall, Southport
Belshaw, Ellen St. Andrew's Hall, Southport
Beresford, H. Woodroughs S., Moseley
Besch, D. Bestreben High S., Brondesbury
Bickerstaff, M. Girtonville Coll., Aintree
Biggs, C.M.C. Crouch End High S., Hornsey
Bird, N. Somerville H., Northampton
Biscombe, D. Salisbury H., Plymouth
Blake, E. Barton H., W. Bridgford
Blake, H.H. Stoke H., Guildford
Blantern, E.C. Olton College
Blewett, G.E. St. Kilda's Coll., Redland
Blight, J.R. Cambridge H., Millbrook
Blunsum, O. Woodford High S., S. Woodford
Blyth, L. Holmwood Coll., Westcliff-on-Sea
Bonham, B.M.E. Temple Square S., Aylesbury
Bouttell, R.O.
Licensed Victuallers' Girls S., S.E.
Bower, M.G. South Shore Coll., Blackpool
Brading, M.F. Westbourne H., Cowes
Bragg, E.G. Alexandra Coll., Shirley
Bragg, W.M. Alexandra Coll., Shirley
Brand, M. Stoke H., Guildford
Brattin, E. St. Andrew's Hall, Southport
Braybrooks, M.A. Camden H., Biggleswade
Brentnall, C.W. The High S., Oakengates
Briggs, A.H. Girtonville Coll., Aintree
Bril, A. S. Farnham High S.
Broadley, M.E. Brentwood, Southport
Brook, E. St. Andrew's Hall, Southport
Brooks, O.M. St. Margaret's, Cardiff
Broom, E. Ellerker Coll., Richmond
Brown, G.M. Northcote H., Bexhill
Brown, J. Blagdon, Eastbourne
Browne-Wilkinson, D.F.
Western H., Nottingham
Bruce, G.M. Surrey H., Anerley
Brunyee, E. St. George's H., Doncaster
Buckeridge, N.D. Brook Green Coll., W.
Buckley, E. St. Andrew's Hall, Southport
Budd, A.F. Grovemount, Muswell Hill
Bull, M. Somerville H., Northampton
Bulmer, G. 50 Western Hill, Durham
Bulmer, L.R. Highfield S., Harrogate
Burcham, I.L. Lulworth H., Caerleon
Burden, D.M. High S., Hornchurch
Burke, E.M. 109 Uxbridge Rd., Ealing
Burrow, H. Edgehill Girls' Coll., Bideford
Burt, E.M. Lingfield H., East Grinstead
Burt, G.J. Grosvenor H., Cricklewood
Butler, E.F. Ellerker Coll., Richmond
Butler, L. Penpol Girls' S., Hayle
Buzzard, D.M. Rosemont High S., Bishopston
Cadwell, E. St. Andrew's Hall, Southport
Cambridge, S. Duke Street S., Bath
Campbell-Everden, L.E.M.
St. Catherine's, New Cross
Candy, G.M. Warwick Coll., Brixton Hill
Canning, F. Ladies' Coll., Nantwich
Cannon, J. Queen's S., Cliftonville, Margate
Canuet, L.B.
Parochial S., St. Clements, Jersey
Capp, M.E. Wellington S., Deal
Cardy, G.M.
Royal Bay H., Gorey Village, Jersey
Case, V. Temple Square S., Aylesbury
Castle, F.M. Westmont, Newport
Catt, W.I. St. Clare S., Southwick
Chambers, K.E. Cambridge H., Finchley
Chandler, D.V. Durham H., Eastbourne
Chapman, E.E. Endsleigh H., Colchester
Child, H.R. Hill Croft S., Wellingborough
Chilton, I. Drydenbank, Cliftonville, Margate
Ching, D. Edgehill Girls' Coll., Bideford
Chivers, W. Parnella H., Devizes
Clarke, L. Lime Tree H., York
Clarke, M. Breck Coll., Poulton le Fylde
Clarkson, M. St. George's H., Doncaster
Clay, M.P.E. Brook Green Coll., W.
Clayton, G.M. Edgehill Girls' Coll., Bideford
Clayton, J. St. Andrew's Hall, Southport
Clemetson, E.E. Steyne S., Worthing
Cleverdon, W. Edgehill Girls' Coll., Bideford
Cobbald, F.M. Larchmount Hall, Yatton
Cohen, R. St. Andrew's Hall, Southport
Coleman, N.C. Ripley H., Barnet

GIRLS, LOWER FORMS—*Continued.*
Collett, D.K. Cornwallis High S., Hastings
Collier, K. Endsleigh H., Colchester
Collins, D. Orton Coll., Coleshill
Collins, G.V. Down End, Clifton
Collins, W.M. Cambridge H., Finchley
Colmer, L.M. Grosvenor H., Cricklewood
Comber, R.E. Linley H., Worthing
Conlan, K.H. York House, Swanley
Cook, E.V. Gram. S. for Girls, Worcester
Cookman, D.K.
Woodford High S., S. Woodford
Coote, D.A. Glenarm Coll., Ilford
Cornall, M. Grimshaw St. British S., Preston
Corner, H.M.
Clark's College High S., Tufnell Park
Coton, G.W. Hope Lodge S., Bexley Heath
Courlander, K.G.L. Cambourne S., Richmond
Cousins, L. Salisbury Rd. Girls' S., Plymouth
Cowley, A.F.V.
Licensed Victualler Girls' S., S.E.
Cox, D. Edgehill Girls' Coll., Bideford
Cox, D.M. Clarendon S., Bath
Cragg, E. Fernside, Grantham
Craig, E. St. Andrew's Hall, Southport
Crane, E. Woking High S.
Creedy, D.K. Larchmount Hall, Yatton
Crick, E.H. Penketh School
Crisp, J. St. David's Coll., Moreton-in-Marsh
Cristol, R. Somerset H., Ramsgate
Cronin, A. Loreto Conv., Manchester
Cropper, D. St. Andrew's Hall, Southport
Crowe, A. Salisbury Coll., Wavertree
Cubitt, N.P. Private tuition
Culshaw, G. St. Andrew's Hall, Southport
Cunliffe, M.E.
Grimshaw St. British S., Preston
Curtis, E.M. Warwick Coll., Brixton Hill
Curtis, G.L.
Royal Masonic Inst., Clapham Junction
Dalrymple, L.M.
Melbourne H., Clapton Sq., N.E.
Dalton, L. St. Andrew's Hall, Southport
Dance, E.W. Willesden High S. for Girls
Danson, M.P.M. Alleyn Coll., Margate
Davenport, M. Penketh School
Davies, D.M. Gelliwastad S., Pontypridd
Davies Edwards, H. St. Maur Coll., Chepstow
Davies, F.D. Lancefield S., Southend-on-Sea
Davis, M.K.
Montpellier Coll., Budleigh Salterton
Dawkins, K.N. Chestnut H., Lincoln
Daysh, E.C. Queensthorpe, Cosham
De Koningh, G. Highleigh H., St. John's
Denison, C.M. Birklands, Harrogate
Denness, M.E. Alexandra Coll., Shirley
Derbyshire, E. St. Andrew's Hall, Southport
Devlin, M. Salisbury Coll., Wavertree
de Whalley, O.M.A.
St. Catherine's, New Cross
Dewhirst, Margaret Malvern H., Birkdale
Dewhirst, Marion Malvern H., Birkdale
Dice, E.W. Felix H., East Dulwich
Dick, A.W.
Royal Masonic Inst., Clapham Junction
Dickinson, M.A. Rougemont Coll., Blackpool
Dilliway, E.M. Crouch End High S., Hornsey
Dodimead, C.A. Camden H., Biggleswade
Dorey, E.L.
Royal Bay H., Gorey Village, Jersey
Douglas, E.A.
Teddington Coll., Upper Teddington
Douglas, M.S. Southend College
Dowdall, E. Ystrad H., Newport
Downey, E. Beulah House High S., Balham
Drury, M.L.
Clark's College High S., Tufnell Park
Duffield, R. The Crescent S., Norwich
Duguid, M. Beualbyn, New Barnet
Easton, W.M.
Melbourne Coll., Thornton Heath
Eaton, D.K. Claremont Coll., Forest Gate
Edge, W.J. Milton H., Atherstone
Edminson, J.M.
Heaton High S., Newcastle-on-Tyne
Edwards, H.N. Private tuition
Edwards, P. 21 Avenham Lane, Preston
Elderton, V.L. York House, Swanley
Elliott, D.J.H. Lynton H., Portsmouth
Ellis, W. F. St. Winifred's S., Torquay
Emerton, E. Fernside, Grantham
Evans, F.M.G.
Chorlton High S., Chorlton-cum-Hardy
Evans, O.
Royal Masonic Inst., Clapham Junction
Falkner, B.M. Highfield, Wallington
Fall, K.M. Chatwin H., Hurworth-on-Tees
Fanshawe, M.
Licensed Victuallers' Girls' S., S.E.
Farley, A.B. Maindee Lawn S., Newport
Farmer, C.M. Southend College
Fausset, L.
Royal Masonic Inst., Clapham Junction
Fehrenback, E.
Salisbury Rd. Girls' S., Plymouth
Feldwick, E.M. Surrey H., Anerley
Feurer, W.M. Dudley H., Stoke Newington
File, F.H. Summerbrook, Reading
Fish, M. 21 Avenham Lane, Preston
Fisher, D. Pencraig Coll., Newport
Fisher, D.F. Blagdon, Eastbourne
Fletcher, H. Hope Lodge S., Bexley Heath
Floyd, C. Conv. S., Hazlewood Crescent, W.
Foord, E. Woking High S.
Ford, A.F. Evelyn High S., Up. Holloway
Francis-Drake, Q.G.
Evelyn High S., Up. Holloway
Frankel, R. Somerset H., Ramsgate
Fryer, D.E. Highfield S. Harrogate
Fryers, W.R. Bestreben High S., Brondesbury
Gale, G.H. Froebel H., Worthing
Gallichan V.
Les Marais High S., La Rocque, Jersey
Garbett, M.L. Brooklyn H., Wellington, Salop
Garrett, M.L. Castle Hall S., Northampton
Gearing, E D. Summerland S., Richmond
Gibson, I. Chatwin H., Hurworth-on-Tees
Gill, E.L. Woodside, Hastings
Gill, F.M. Southend College
Glasspool, V.
Royal Masonic Inst., Clapham Junction
Godfrey, E.L.
Licensed Victuallers' Girls' S., S.E.
Gold, S. Margate Jewish Coll.
Goldstein, J. Somerset H., Ramsgate
Gornall, L. St. Andrew's Hall, Southport
Gosling, E.M. Somerville H., Northampton
Graham, A.I.C.
High S. for Girls, New Brighton
Gray, H.Y. Steyne S., Worthing
Green, D. Grimshaw St. British S., Preston
Green, E.M.
Royal Masonic Inst., Clapham Junction
Green, G.M. Grosvenor H., Wokingham
Green, M. Chestnut H., Lincoln
Greenop, M.E. Warwick Coll., Brixton Hill
Greenwood, E.M. Brentwood, Southport
Greenwood, M. Birklands, Harrogate
Griffin, M. Alleyn Coll., Margate
Griggs, A. York House, Swanley
Grimmer, M.I.A.
Nantly House Coll., Heston-Hounslow
Grindrod, E.G.S. York House, Swanley
Grose, E.B. Castle Hall S., Northampton
Grout, W.M. High S., Hornchurch
Hadfield, G.G.
Brooklyn H., Wellington, Salop
Haines, O.E. Chichester H., Mortimer
Hall, A. St. Anne's Coll., St. Annes-on-Sea
Hall, A. 50 Western Hill, Durham
Hall, E.M. Ladies' Coll., Nantwich
Hall, F.M. Ellerker Coll., Richmond
Hall, N. Penketh School
Hambly, M. Salisbury Rd. Girls' S., Plymouth
Hamilton, K.A.
Melbourne H., Clapton Sq., N.E.
Hancock, I. Devonshire Rd. S., Forest Hill
Harding, L. Salisbury Rd. Girls' S., Plymouth
Harper, N. Fairhaven High S., nr. Lytham
Harries, G.O. Friedenheim, Ealing
Harrison, G. Braunstone H., Newport
Harston, D.I. Valley Bridge H., Scarborough
Hart, E.A. Steyne S., Worthing
Harvey, E.M. Church Institute, Ilkeston
Haveling, H. St. Andrew's Hall, Southport
Hawkings, E.M. St. Winifred's S., Torquay
Hazell, H.G.M. Endsleigh H., Colchester
Head, A.L.
Nantly House Coll., Heston-Hounslow
Heaps, H. Grimshaw St. British S., Preston
Heasell, D.K. Alexandra Coll., Shirley
Heaton, E. Grimshaw St. British S., Preston
Hemmin, E.V. Warwick Coll., Brixton Hill
Henderson, S.H. Crouch End High S., Hornsey
Heuwood, E.B.
12 Liverpool Terrace, Worthing
Hickmott, R.M. Apsley H., Wood Green
Hiett, E. St. Elmo's Coll., Totton
Higgs, E.M. Hemdean H., Caversham
Higgs, P.M. Private tuition
Hill, G. London Coll., Stratford
Hill, M. Loreto Conv., Manchester
Hill, V.M. Hemdean H., Caversham
Hine, M.M. Salisbury H., Plymouth
Hinton, E.E. Dresden H., Evesham
Hoad, G.E.E.
Holmwood Coll., Westcliff-on-Sea
Hodgkinson, W.
Royal Masonic Inst., Clapham Junction
Hodgson, G. St. Andrew's Hall, Southport
Holder, M. St. Andrew's Hall, Southport
Holdsworth, E.K. Brentwood, Southport
Holley, A.M.
Grimshaw St British S., Preston
Holmes, L. St. Andrew's Hall, Southport
Holt, M. St. Andrew's Hall, Southport
Homan, P.M. Fellenberg S., Maidstone
Hood, R.L. Alexandra Coll., Shirley
Hooper, D.N. Penpol Girls' S., Hayle
Hope, I.M. Berkswell Private S.
Hopkins, D.Y. Edgehill Girls' Coll., Bideford
Hopkins, H.K.
Licensed Victuallers Girls' S., S.E.
Horley, M.
Montpelier Coll., Budleigh Salterton
Horrell, G.D. Mountside, Hastings
Horsfall, D.M. Rougemont Coll., Blackpool
Horton, D.E. Gram. S. for Girls, Worcester
Horwell, E.E. The Middle S., Holsworthy
Hosp, M. Ellerker Coll., Richmond
House, W. Edgehill Girls' Coll., Bideford
How, M. Temple Square S., Aylesbury
Howell, N.E. Endsleigh H., Colchester
Hoy, D.H. Highleigh H., St. John's
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2. PRACTICAL EXAMINATION FOR CERTIFICATES OF ABILITY TO TEACH. — The next Practical Examination will be held in **February,** 1907.

3. CERTIFICATE EXAMINATIONS. — The Midsummer Examination for Certificates will commence on the 25th of June.

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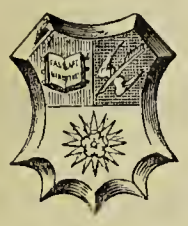

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The Educational Times.

The Public Schools from without.

In a recent volume of essays written by eminent schoolmasters the *Times* has presented to us various aspects of public-school life viewed from within, and the editor of the volume has summed up for us the general impression left on his mind by this composite picture. The old public schools—Eton, Harrow, Winchester—are full to overflowing, and modern foundations framed on their model—Marlborough, Clifton, Haileybury—increase and prosper: this is the silent and sufficient answer of the great public which "judges more wisely and justly than all the connoisseurs."

At the risk of being ranked by the *Times* editor among these connoisseurs, the writers on education, "whose chief qualification is a total ignorance of the public schools at which they were not themselves educated, backed by a hearty contempt for everything outside their own range of experience, which is none the less a mark of ignorance because it is most frequently paraded in the name of science," we shall venture to offer some criticisms of the public schools from outside that this volume suggests to an outsider. There is an Irish proverb, "The man on the dyke sees the most of the hurling," and it would be rash to conclude from the fact that enlistment is active and commissions are eagerly sought that the English Army is effective in all its branches or that England is secure from foreign invasion.

The first feature that must strike every reader of the essays is their individualism. We are not complaining that each writer has been given a free hand and left to treat his special subject in his own way. The editor gives us fair warning not to look for a *symposium* or to imagine any controversial purpose for which the writers have been brought together, as in the case of "Essays and Reviews." Our complaint is that the view of each writer is bounded by his own narrow horizon—not only that he treats his own subject without regard to other subjects, but that he ignores, or is ignorant of, the developments of that subject in English schools of another class and in the schools of the Continent. We cannot say of them, as Geraint says of the sparrow-hawk's village:

> They take the rustic murmur of their bourg
> For the great wave that echoes round the world.

They live in Camelot, or, as the editor would put it, "in the fierce light that beats around a throne." They are an aristocracy, but for that very reason they stand outside the current of national thought, and, so far from leading, they follow slowly, and for the most part reluctantly, in the wake of educational reform. We have not space to substantiate this charge, and can only give one or two typical illustrations.

The most glaring and flagrant defect in our secondary schools is the lack of trained teachers, and one of the main endeavours of reformers—not only of the "connoisseurs," but of the Board of Education and the more enlightened Local Authorities—has been first to determine what form this training shall take, and then to make due provision for it and ultimately to enforce it by official sanction. But of training or of the Teachers' Register—which is the outward and visible sign of training—there is not a word in the volume.

Take, again, the subject of classical study. Many eloquent and some wise things are said in its defence. Mr. T. E. Page tells us that its supreme excellence lies in its "uselessness"—that the study does not, and never can, pay; that no knowledge of Plato is worth a shilling in Threadneedle Street. We ask, in passing, whether this is literally the fact; whether the classical head masters might not, like the Church dignitaries in Clough's dream, protest that it had been worth, to some of them, some hundred thousand pounds, and was not a thing to be given up unduly. But this is not our point. The question of the hour is not the absolute, but the relative, value of the classics—how the study is to be fitted in with other and at least equally important studies, and, moreover, how it is to be dovetailed with those studies of English, of drawing, of rudimentary science, which form the basis of all education and are only beginning to be recognized in our ancient grammar schools. That the secondary schools should take the pick of our elementary scholars and carry on their education without a break is not even contemplated. There

will come a day of rude awakening, and the new democracy will not long endure the scandal of rich endowments founded for the sons of the poor squandered on the sons of bankers and high officials, and restricted to the class of parents who can afford to have their children crammed in Greek and Latin verse.

It is just forty years ago since Lord Houghton, in "Essays on a Liberal Education," put his finger on the great blot of our public schools. They are, he tells us, designed for the sons of gentlemen, and they owe their popularity to their social prestige. To depart from the traditional education of a gentleman, to introduce anything that might be branded as a "commercial" training, would appear a descent in the social scale. Hence the public-school man "may become a landed proprietor without a notion of agriculture, a coal owner without an inkling of geology, a sportsman without curiosity in natural history, a legislator without the elements of law, and every attempt to supply these deficiencies is regarded as little less than revolutionary."

That we have moved far since Lord Houghton's day this volume abundantly testifies, and we should be the last to deny it. Does not one classical head master boast that he can turn out full-fledged civil engineers able at starting to earn their own living? Yet, in spite of the advance that they have made in morals, in industry, and in enlargement of studies, the fact remains that our public schools are still dominated by classical study, the playgrounds of the rich and the preserves of the upper middle classes; that they have not yet been co-ordinated with the schools below them, and stand out as so many isolated *enclaves* in the national system of education.

Mr. Ruskin's millennium is yet far distant, but there are signs of its coming: "I confess to hoping for a time when the phrase 'the education of a gentleman' will have lost its meaning, because the sort of education which alone makes the gentleman in any true sense will be within the reach of all. As it was the aspiration of Moses that all the Lord's people should be prophets, so with all seriousness and reverence we may hope and pray for a condition of English society in which all honest citizens will recognize themselves and be recognized by each other as gentlemen."

NOTES.

The Report of the Teachers' Registration Council is not exhilarating so far as statistics are concerned; but that is no fault of the Council. Some of the regulations have lost their force, and the uncertainty as to the fate of the Register has had untoward effects: more especially, though without surprise, we regret to learn that this uncertainty "has proved a serious check to the movement for training," and that, too, at a time of increasing demand for secondary teachers. The Council's outlook on the future is recorded in considerate terms. A dual Register with a distinction based on type of school service cannot be maintained. "The Council would desire to see a Register in a single column, to which the condition of admission should be a high qualification, both academic and professional, and in which the name and type of the school in which experience has been obtained, as well as the individual qualifications of the teacher, should be indicated." Further, they express their conviction that the profession generally would give their confidence and support to "the formation of a Professional Council responsible to the Board for the policy, as well as the administration, of the Register." In careful terms they indicate how necessary to the success of "any movement to improve the professional standing and secure the professional training of teachers" is the active support of the Board of Education. The relation of the old and new Registers is, of course, a "delicate and difficult problem." The Council disclaim the idea of offering any solution, but they "point out what they conceive to be the factors of the problem." Elsewhere we reproduce their suggestions in full text. The Report is a well balanced, suggestive, and most capable presentation of the complicated and difficult position of the Register. With the good will of the Board, which may be fairly be taken for granted, there should presently be found some way out of the *impasse*.

Mr. McKenna has decided that application shall be at once made for a charter for the South Kensington "Charlottenburg." The question of incorporation with the University of London is left over: "after an interval of time sufficient to permit of the full development of the governing body to be established under the Charter for the new institution—say, some twelve months after its establishment—I shall be prepared to advise the appointment of a Royal Commission to consider whether the amalgamation of the new institution with the University is desirable and feasible, and, if so, on what lines it can best be carried out." We can only hope that this does not practically mean a huge breach in the co-ordination of higher education in London, which has been slowly proceeding in the face of great difficulties. Already the great centres of industry outside London are manifesting considerable indignation and jealousy, and a fear is expressed on their behalf that local taxpayers and ratepayers that have helped to develop local universities "will have to contribute through the national purse to the great grants that are to be devoted to what may be dubbed 'McKenna's folly.'" Such outbursts suggest the propriety of some reconsideration of the criticism. The idea of giving "preliminary training" in the new institution seems very dubious and insidious: if necessary, "at first, at any rate," it needs to be strictly guarded; otherwise there will be unfortunate conflict with outside institutions, and a danger of reducing the standard of the higher and principal objects of the College. One cannot but doubt the necessity of Mr. McKenna's hurry, or promptitude, or the wisdom of starting the College independently of the University.

Again the Chancellor of the University of Cambridge sets forth the needs of the University in a summary and commentary that overflow two columns of the *Times*. There are no fewer than a score of heads of distress, some of them largely complex; and, in spite of "valuable assistance in the form of bequests, benefactions, and gifts" during the past few years, the sum immediately necessary is reckoned roundly at about one million and a half sterling money,

"apart from any question of a pension fund for professors," and solely for "the equipment of, and the provision of staff for, the University." The list will fairly stand strict scrutiny: the money is clearly needed. To British ideas the magnitude of the demand is startling: we have not yet familiarized ourselves, as the other progressive nations have done, with the vital national importance of a thoroughly competent and thoroughly equipped higher education and original research. The first response should come from the classes educated at Cambridge, and, indeed, no other response should be necessary. We may not have Rockefellers or Carnegies, but a million or two should be a mere bagatelle to our enlightened moneyed people. Yet, strangely enough, the sums which the Cambridge University Association, formed on January 31, 1899, has been able, during these eight years, to transfer to the University "amount in all to about £115,000"! In the last resort the Government may properly be prayed in aid; and then, perhaps, the University might be placed upon a broader national basis.

The *South Wales Daily News* sounds the loud trumpet over the establishment of a separate Department of Education for Wales, and congratulates the Principality both on the new Department and on the selection of the two officials:

> In educational matters Wales has set the pace for England. She has shown what can be done in secondary schools; in university education already she is able to compete with the greatest seats of learning in the country. She has, moreover, taken the lead in the institution of public elementary schools free from the trammels of the priest, and "broad based upon the people's will." It is peculiarly true of the Welshman that he will have the best in education if it can be obtained, and that no opposition will deter him in his struggle for his ideal. Wales has made out an irrefutable claim for full control of her educational system, and now, despite the action of the House of Lords, the first step has been taken. It is no extravagance to say that the Department now instituted is the beginning of a new era for Wales: it is a great deal in itself; it is the basis of greater things. . . . And it is in the fitness of things that the two gentlemen selected for office are Welsh educationists of the best type: men of varied interests, of the highest mental training, of broad views, and of patriotic instincts. They have won their spurs in other spheres; they both possess the intensest public spirit, and have all the qualities necessary to the important work to which they have been called.

It would be churlish to damp the natural rejoicings of Welshmen at the attainment of the long desired liberty to manage their educational affairs in their own way. There need be no doubt that, "whatever powers are given to the Principality, they will be wisely used in the advancement of the United Kingdom no less than of the nation itself." The better the example the Principality can show us, the deeper will be our gratitude. A friendly rivalry for the primacy of educational usefulness must be for the good of us all.

The latest manifesto of the Committee of the Carnegie Trust points to a more organic influence upon Scottish university education than they have hitherto exerted. It is to be welcomed as a token of a sound businesslike determination to get the best value for their money, as well as an opportune pressure in the direction of much needed reform. At present the Preliminary Examination appears to cover only part of the essentially preliminary course of study, leaving the rest to be struggled with somehow side by side with the regular curriculum for graduation; and the Committee very properly mean to insist that all preliminary matters shall be duly passed before the regular graduation course be commenced. In consonance with this principle they also require that the student shall pass his successive stages of examination for graduation at the proper times, and not go on to a fresh stage, leaving his pass in the preceding stage to be accomplished at some problematical future time. This ukase ought to relieve the studies of the undergraduates from wasteful embarrassments: one thing at a time and that done well. The demand for "some systematic sequence in a student's work" seems sufficiently elementary and reasonable. Again, the claim that the universities should have the power of revising their curriculum in accordance with changing conditions is likewise elementary; indeed it is amazing that any such claim should require to be urged at all in these latter days. It will strongly support the movement for the release of the universities from the four-legged race established by the University Commissioners, so that in the future, as in earlier times, each university may be able to shape its course for itself independently of the concurrence of the other three. Finally, the Trust declares for an extended session—an extension from six months to three terms—in order to secure for the students a fuller training in the subjects for graduation. The stock objection that this would prevent the poor student from working in summer for his winter maintenance is largely met by the Trust's payment of fees, and is wholly swept away by their new announcement of contemplated supplement in the special cases in question.

The omission of Queen's College, Galway, from the proposed scheme of university reconstitution in Ireland may be only provisional, though the proportions and the vitality of the College render its inclusion doubtful. Meantime the Bishop of Clonfert has been trying to rouse the Catholics of the West to a belated interest in the institution, which, he thinks, "if brought into harmony with the feelings of the people, could be made a most active and valuable centre of culture and of material progress for the whole West of Ireland." The Bishop relies on three things. In the first place, "a College disliked and shunned by the Catholics of the province, who are 96 out of every 100 of the population, cannot be taken as the measure of a College approved, respected, and enthusiastically supported by all." Secondly, finding that the census of 1901 recorded 1,316 boys and 572 girls as receiving a superior education in Connaught, and pupils galore at the Intermediate Colleges in Tuam, Sligo, Ballinasloe, and other places, he concludes there can be no lack of students if the College but had "a favourable constitution." And, thirdly, the Connaught of to-day is not the Connaught of the future: "when scientific methods of agriculture have been introduced after the settlement of the land question, and the wealth of the sea has been fully worked, and by degrees, as a result of social peace and better training, industries begin to creep in, the population and wealth of the province will surely be sufficient to support a flourishing centre of higher education." The first two

points are sufficiently striking, and it is, indeed, scarcely a fair answer to ask the Bishop to wait for the anticipated improvements. But the real difficulty—the essential and permanent conflict of theological opinion—must be squarely faced by him as well as by the other parties. If, however, an accommodation can be reached in the other provinces, the Bishop's three considerations might reinforce the inherent weakness of Galway, and enable it to maintain, on trial at least, its existing equality with the sister provinces. The "if" seems a tolerably stiff one.

The Chairmen of the Provincial Committees and of the Business Sub-Committees appointed by the Edinburgh, Glasgow, and Aberdeen Committees for the Training of Teachers appear to have agreed upon the following conditions under which religious instruction is to be given by the Churches in the training colleges :—

(1) That religious instruction in accordance with the use and wont of the transferred training colleges shall continue to be provided under the authority and general regulations of the Provincial Committees, and shall form a part of the ordinary time-table.

(2) For the purpose of giving this instruction, the Churches shall be at liberty to employ members of the staff or other teachers, subject to the approval of the Provincial Committees.

(3) That the Churches shall draw up the syllabus of instruction, and examine in it as at present, the time-table to be approved by the Provincial Committees.

(4) That the Churches shall report to the Provincial Committees the degree of proficiency attained by all students who have attended the classes for religious instruction, and that the marks thus gained shall be entered by the Provincial Committees in any certificate granted by them.

(5) That the transferring Churches shall undertake all expenses connected with religious instruction, and that their arrangements with the teacher as to the special remuneration to be received by him for imparting such instruction shall be reported to the Provincial Committees.

SUMMARY OF THE MONTH.

The President of the Board of Education is making arrangements for the establishment of a District Department of the Board to deal with all grades of education in Wales and Monmouthshire. He has appointed Mr. A. T. Davies Permanent Secretary of this new Welsh Education Department, and Mr. O. M. Edwards Chief Inspector for Welsh Education. It is anticipated that the gradual separation of the work assigned to the new Department will be completed by next Christmas.

Mr. Davies, who is a solicitor, has been closely associated with many movements for the advancement and spread of education in Wales, both in its elementary and higher branches; and, as a governor of the University College of Wales, Aberystwyth, a member of the Education Committee of the Denbighshire County Council, and the organizer of a successful scheme for the promotion of technical instruction in a populous district of Lancashire, he has been brought into immediate contact with the principal administrative problems in connexion with public education.

Mr. Owen M. Edwards gained a brilliant reputation at Oxford, where he is a Fellow of Lincoln College and Lecturer in Modern History. He also holds the degree of B.A. of London University. He is the author of several works on Welsh history and literature, and has edited various magazines in Welsh and English, some of which have been specially designed for children and young people. He was the intimate friend of the late Mr. Thomas Ellis, and has been closely connected with Welsh educational and literary movements—being, indeed, one of the main sources of inspiration of recent developments in these directions. As Warden of the Guild of Graduates of the University of Wales, and in many other ways, he is closely familiar with Welsh education in its various aspects. He was M.P. for Merioneth, 1899–1900.

The President of the Board of Education has appointed Mr. W. W. Benn, M.P., to be his Parliamentary Private Secretary (unpaid).

A conference of representatives of the governing bodies of secondary schools in London was held at the College of Preceptors (January 30). Representatives of the Head Masters' Conference and of the Incorporated Association of Head Masters were also present by invitation. Dr. T. Gregory Foster, Provost of University College, presided, and it was unanimously resolved to form a standing Consultative Committee of representatives of the governing bodies of secondary schools in London, and to ask the Rev. Dr. Gow, Head Master of Westminster School, and the Rev. Canon Bell, late Head Master of Marlborough College, to join it.

A dozen well known mathematical masters in public schools combine to write to the press their opinion as to the probable effect of the new regulations for the Mathematical Tripos upon work in schools. They agree that "the effect of the present Tripos on the work of moderate mathematicians"—most of their pupils, perhaps—"is far from satisfactory," and that "the new regulations will arrest the decay of the Mathematical Tripos, and will restore its lost prestige as a good education for boys of average ability." They write :

Such boys would benefit by a mathematical course conceived on broad and fundamental lines. At present their attention is necessarily directed too much to tricks and puzzles. The Tripos papers, designed to test the best men, offer fatal temptations to the weaker candidates to snatch a few marks by a bowing acquaintance with subjects they can never master. The necessity of placing the high Wranglers forces technique into undue prominence : whatever may be the effect of this on the best men, it warps the education of the weaker mathematicians. The object of the present letter is to point out that this unwholesome influence is not confined to the University, but penetrates to the schools. The artificiality of this training is leading schoolmasters to direct the attention of their pupils to the Engineering rather than the Mathematical Tripos. Of these boys, some will make engineering their profession ; others will merely take the Engineering Tripos as the best education available. For the latter class this is an unnatural development ; they really want a mathematical education, and would return to the Mathematical Tripos if it were reformed. At the same time, the destined engineers will find the new Mathematical Tripos useful ; it will broaden their outlook and give a good training preliminary to their professional work.

The Delegation for the Adoption of an International Auxiliary Language, which claims to comprise at present the representatives of more than two hundred and fifty learned societies and professional associations of all countries, and to have received the adherence of more than a thousand members of academies and universities, proposes to proceed, in the course of the present year, to the choice of the auxiliary language through the intermediary of a competent international authority. In order to give this decision the greatest practical effect, it addresses a pressing appeal to all such as desire to see the adoption of a neutral language medium for international relations of every sort. It requests learned societies and professional associations (Chambers of Commerce, &c.) to record their approval of its programme, to name a delegate, and to send it an official intimation of this two-fold decision. The General Secretary is M. L. Leau, Docteur-ès-Sciences, 6 rue Vavin, Paris VIe.

The London Branch of the General German Language Association celebrated its eighth anniversary at the Holborn Viaduct Hotel on February 2. There was a large attendance. The President, Prof. Dr. Aloys Weiss, stated that the roll of membership had increased during the year from 595 to 617, about half the members being English either by birth or by naturalization. He then delivered an address on Anglo-German Relations in Science and History. The English, he maintained, were at least as genuine offshoots of the Teutonic stock as the Germans themselves, and had changed less their racial characters. In support of his assertions he referred to the fact that 60 per cent., or more, of the words used by Shakespeare were of Saxon origin, to the craniological researches of Retzius, Huxley, and Virchow, and to such other criteria as colour of skin and texture of hair, &c. Hence the English and the Germans were nearer relatives than any two other of the chief European nations. Dr. Weiss finally gave a summary of the historical relations in which peace had

never been disturbed between the two sister nations, and expressed the hope that Carlyle's well known ideal of Anglo-German brotherhood might be realized. After the usual vote of thanks followed an excellent selection of music and recitations.

The annual report of the Geographical Association shows a roll of 535 members, including the newly formed branch in South Africa—an increase on last year. The membership now includes teachers of every grade, school inspectors, and others interested in geographical information, both at home and abroad. A special committee has been appointed to discuss the ideal and possible atlases for elementary schools—a suggestion coming from the West Riding County Council; and its report will soon be published. Another special committee has been appointed to co-operate with a committee of the Historical Association, for the discussion of syllabuses in the combined subjects of geography and history, and for the drafting of suggestions for a Historical Atlas for schools. One of the most important of the activities of the Association is the answering of letters from members about books, maps, apparatus, methods, &c. This work became so heavy that last year Mr. J. F. Unstead, Lecturer in Geography in the Goldsmiths' College, London, S.E., was appointed Honorary Correspondence Secretary.

The first general meeting of the Bristol Branch of the English Association was held on February 15 at the University College. After the election of officers, Prof. R. P. Cowl opened a discussion on "The First Stages of Teaching English Grammar and Language." The subject was taken up with interest by many present, and an animated discussion followed. The meeting was well attended, about forty being present.

At the monthly meeting of the Royal Meteorological Society (February 20), Dr. H. R. Mill, President, in the chair, Mr. Edward Mawley presented his report on the phenological observations made during 1906 by observers in various parts of the British Isles. The most noteworthy features of the weather as affecting vegetation were the dry period lasting from the beginning of June until the end of September and the great heat and dryness of the air during the last few days in August and the first few days in September. Wild plants came into flower in advance of their usual dates until about the middle of April, after which time they were as a rule to about the same extent late. Such early spring immigrants as the swallow, cuckoo, and nightingale reached these islands somewhat behind their average dates. The only deficient farm crop, taking the country as a whole, was that of hay, all the others being more or less over average. The yield of apples was about average in all but the North of England and in Scotland, where there was a very scanty crop. Pears and plums were everywhere very deficient; whereas all the small fruits yielded moderately well. As regards the farm crops, the past year proved even a more bountiful one than that of 1905.

The first of a course of six lectures on "Japanese Education," under the Martin White Benefaction of the University of London, was delivered at University College (February 16) by Baron D. Kikuchi, sometime Minister of Education in Japan, who received part of his education at University College. Dr. Gregory Foster presided. The lecturer said that for several centuries before the restoration of the power of government into the Imperial hands in 1868 the military class were the practical rulers of Japan. On the restoration of the Imperial power the fifth article of the Imperial oath provided that knowledge should be sought for throughout the world, "so that the welfare of the Empire may be promoted." Schools were established by the Government in Tokio where Japanese and Chinese literature was taught, and other schools were established and reopened at which all classes of people were admitted, instead of one class, as formerly. The Central Government reopened schools at which foreign studies were prosecuted under foreign tutors. In 1870 the Han were ordered to send a certain number of their most promising youth to enter a school of foreign languages and sciences. That was done at their own expense. They were the tributes from the Han to the Emperor. Several of the most prominent men of the present day were among the students so sent, including Baron Komura, the Japanese Ambassador to Great Britain. Alluding to the method of teaching, he said the spelling books, diagrams, &c., were entirely on the American model. In September, 1871, the Department of Education was first established, and a year later the first code of education was promulgated. The preamble to the Code explained the principle of the new educational system. It set out that everybody must receive education without distinction of class or sex. Regulations for sending students abroad at Government expense were embodied in the system. At the same time sufficient emphasis seemed not to have been laid on culture and moral education. According to the Code, the whole country was to be divided into 8 university districts, in each of which there was to be a university; each university district was to be divided into 32 middle districts, in each of which there was to be a middle or secondary school: and each middle school district was to be subdivided into 210 elementary school districts, each with an elementary school, so that there would be altogether 53,760 elementary schools. There were also established technical schools and normal schools for training teachers in elementary schools. The scheme could not be carried out in its entirety at once: it was too ambitious. Thus it was not until 1877 that the first university was established in Tokio.

The class lists show that the total number of candidates entered for the Cambridge Local Examinations held in December last was 13,777, exclusive of 2,155 candidates examined at colonial centres. In the Senior Examination 933 boys and 1,227 girls passed, 84 boys and 21 girls being placed in the First Class. Sufficient merit was shown by 397 boys and 115 girls to entitle them to exemption from one or both parts of the Previous Examination. Of the Junior candidates 2,720 boys and 1,890 girls passed, the numbers placed in the First Class being 335 and 61 respectively. In the Preliminary Examination 1,718 boys and 1,324 girls satisfied the examiners.

The Committee of the Carnegie Trust (says the *Scottish Review*, February 14) addressed last week a communication to the four Scottish universities which seems to us a most weighty contribution to the question of university reform. The Trust has used its unique opportunities to constitute itself a kind of Intelligence Department on university questions. Four main points are raised. The Preliminary Examination does not qualify for a graduation course. Assuming that a boy passes it in lower Latin, higher mathematics, English, and a modern language, he must still pass higher Latin before he can complete the curriculum. That is to say, he must continue his school education; and since the abolition of the old junior classes there are no facilities for the work. The Trust, therefore, will demand from its beneficiaries the passing not only of the Preliminary Examination, but of any other entrance examination required for a complete curriculum qualifying for the ordinary degree. In the second place, the Trust asks that there be some systematic sequence in a student's work, and that he pass his examinations at the proper time. Again, it urges that the universities should have the power to revise their curriculum in accordance with changing conditions. Finally, it advocates an extended session of three terms, in order that the student may get a fuller training in his degree subjects. The objection that this scheme might press hardly on the poor man who has to work in the summer for his winter's colleging is met by the announcement that the Trust may be able to do more than pay the fees in such cases. We commend the report to the study of every one interested in Scottish education.

We record with much regret the death of Sir Michael Foster, K.C.B. (January 29), in his seventy-first year. He was born at Huntingdon, and educated at University College School and University College, London. After practising medicine at Huntingdon for six years, he returned to University College, where he was appointed Demonstrator (1867) and Professor (1869) of Practical Physiology. In 1870 he accepted the new Trinity College Prælectorship of Physiology, and he held the Professorship of Physiology at Cambridge from 1883 to 1903. From 1881 to 1903 he was a Secretary of the Royal Society. In 1899 he was President of the British Association, and in the same year he was created K.C.B. He was also honorary perpetual President of the International Congress of Physiology. In 1900 he was elected M.P. for the University of London unopposed, but in 1906 he was defeated by Sir Philip Magnus by 24 votes. His work as a physiologist is well known and highly rated. He held honorary degrees of Oxford, Cambridge, and Dublin.

The death of Prof. H. F. Pelham, President of Trinity College, Oxford, and Camden Professor of Ancient History in the University, at sixty-one years of age, means a great loss to national scholarship and active study. Prof. Pelham took a keen interest in scientific progress generally, as well as more particularly in classical study, and while a member of the Hebdomadal Council at Oxford he was always on the side of learning and research. Women's education in Oxford had in him a powerful champion, and Somerville College in particular owed a great debt to him for his enthusiastic service on its Council. He did much for the promotion and management of the British School at Athens and the British School at Rome, his zeal on behalf of these institutions being based on the conviction of the value of Greek and Roman life and literature as a subject of scientific study. Prof. Pelham was one of the first members of the British Academy.

UNIVERSITIES AND COLLEGES.

(*From our own Correspondent.*)

Cambridge.

We have had quite a little excitement over the visit of Mr. Keir Hardie to Cambridge. Every precaution seems to have been taken by the promoters of the meeting to render a "rag" certain. Their efforts were duly rewarded. The speaker was genial, but provocative; the audience scientific, but critical. Unfortunately the scientific criticism took the form of test-tubes of sulphuretted hydrogen, tempered with over-ripe tomatoes. Of course it would have been very much better if those who were responsible for the meeting had confined admission to ticket-holders and issued vouchers only to sympathizers with their cause. We should all be glad to see Mr. Hardie here again, and it is perfectly easy to ensure an orderly meeting if his friends go the right way to work. The disorder was entirely due to a small and noisy element. A very dignified letter has been published by the leaders of undergraduate society, the captains in our various sports, and the chairmen of political clubs, protesting against the faults of a few being imputed to the whole body. It may be more or less true that the undergraduate is individually a fool and collectively a fiend, but there are exceptions, and the press has called us all cads.

Dr. MacAlister's appointment, which was known here before the newspaper announcement and the official disavowal which of course followed, will give an enterprising man some elbow room for good work. The new Principal of Glasgow knows enough about medicine to be Chairman of the Medical Council, and has spirit enough to hit his opponent in the eye, and sense enough not to step on his toes.

Dr. Kenny has been made into the Downing Professor of Law. Of course, we cannot all be Maitlands; but Prof. Kenny's is quite a safe appointment—he is dignified and accurate, judicial and thoughtful. He is pre-eminently cautious, and, if he does not set the Thames on fire, at any rate he will not block the stream.

The voting on the Mathematical Tripos was not a great surprise. Even the opponents of the change are glad the matter is settled. It seems that a good many voters were influenced by the fact that an attempt was being made to reopen a decided question. It certainly would have been more satisfactory if the whole question had been more fully argued and finally settled on the first occasion. One thing stands out as an admitted fact—that the study of pure mathematics as the sole factor in a Cambridge education is practically doomed, except for a few men of special calibre.

A new principle is being adopted in certain examinations—that a student's note-books are to be allowed as evidence of his work. It is difficult to conceive how an examiner can receive assistance from such a source: some lecturers are inaudible and incomprehensible; yet occasionally an ingenious undergraduate with an intellectual corkscrew may get a priceless pearl, but the note-book will show nothing to signify. Some lecturers, on the other hand, give notes that may be taken down *verbatim*, with illustrations and adornments to emphasize their effects. These make a brave show on paper, but do not necessarily prove that the lecturer has exercised his brain as much as his fountain pen. Many people in Cambridge learn; but few can teach.

Mr. Appleton is coming back to us as Master of Selwyn. He is not one to look forward to a life of rest; and the *flamboyant* youth of Selwyn will occupy his thoughts quite as fully as the teeming population of Camberwell. He was a success at the Trinity Mission, but must have found the Vicarage of Ware somewhat a tame function. He will be more in his element now; as his friends always suspected he has a very human side to his character. His brain power and energy will soon push him into a bishopric: he will do justice to his office and his gaiters.

The four candidates still in the running for the Lady Margaret Professorship of Divinity are Dr. Cunningham, of Trinity; Dr. A. W. Robinson; Mr. Inge, of Oxford; and Mr. Bethune Baker. Dr. Cunningham and Mr. Inge are the popular favourites; but a dark horse may win.

The college accounts have been duly published. It might strike the casual observer rather strongly that the corporate income of three colleges, which have about 1,000 or 1,100 undergraduates among them, amounts to over £160,000 per annum, to say nothing of trust funds. It costs the average undergraduate £200 a year to live up here; so that, trust funds, corporate income, and all, some £400,000 a year is the cost to the country of about a thousand men who complete their college course. We say we are not babes in finance.

Prof. Middleton is leaving us. The Government save themselves a deal of trouble by taking our professors to run the Department of Agriculture. We get the best men, and Whitehall knows it.

Dublin.

Steps are being taken by the authorities at Trinity College, Dublin, to resist to the utmost any attempt to translate Mr. Bryce's scheme into legislation. It was unanimously decided at a meeting of Senior and Junior Fellows to offer a determined opposition to any Bill framed upon the lines indicated in Mr. Bryce's speech. A Committee has been formed of Fellows and Professors under the title of the Dublin University Defence Committee. A protest has been drawn up, and now lies for signature at the office of the Defence Committee in Trinity College. The terms of the protest declare Mr. Bryce's proposals "fatal to the interests of liberal university education in Ireland, as well as unjust to Trinity College." At a meeting of the Senate (February 4) a similar resolution was passed, and also a resolution protesting against Mr. Bryce's scheme "because it could provide no adequate safeguard against the introduction of sectarian divisions into the administration of the University."

The Dublin Corporation has passed a resolution requesting representation of the Corporation on the governing body of any reconstituted university in Dublin, and declining to accept as final any settlement that does not provide higher education for the sons of the workers of the country.

Durham.

Dr. Jevons, Principal of Hatfield Hall, the principal Theological College of the Durham University, interviewed on the subject of the proposed reconstruction scheme of the University, said he was inclined to the opinion that the changed conditions will have a tendency to make the University better known, and, in a sense, more popular, thus bringing in more students. Freed as the University would be under the altered conditions from the control of the Chapter, wider scope, Dr. Jevons thinks, would be offered to its operations, and students would be gathered in from much wider sources. Under the present constitution the University is precluded from receiving any financial assistance from the County Council, but with a more elastic constitution this difficulty would be removed. As to the present funds under the control of the Dean and Chapter for the purpose of promoting education in Arts and Theology, these would be transferred to the new authority, and a clause would be inserted in the proposed Act of Parliament guaranteeing that they should continue to be applied to that special purpose. A point which has reconciled the Durham authorities to the proposed change is that, whilst the control the Chapter at present exercises will be transferred to the new authority, the Bishop of the diocese will have the power of veto.

The Senate of Durham University has ratified a concordat with Council of Armstrong College, which, if sanctioned by Parliament, will place the College in the position of a University College, withdrawn from the control of the Dean and Chapter, who rule the University.

Birmingham.

Satisfactory progress is being made with the erection of the new buildings at Bournbrook. Blocks A, B, and C have been completed, and the Great Hall and main entrance will be ready for use early in the ensuing summer. The hall is of huge dimensions, being larger

than the Town Hall. The Council of the University has approved the plans for additional buildings to be erected on the Bournbrook site, fronting the University Road. These additional buildings will include the Harding Memorial Library, the Department of Physics, the Department of Chemistry, and a central tower, which will rise from the court to a height of about 325 feet. The foundations are already in progress.

To clear off the liabilities on the buildings of the men-students' club-house in Great Charles Street, the Council has decided to provide the sum of £820 from the funds of the University, making their contributions to the buildings amount to £2,820.

The graduates and undergraduates on the register at the end of the session 1905–6 numbered 419—Science, 177; Arts, 141; Commerce, 22; Medicine, 79. The number of undergraduates on the register at the commencement of the new session is 365—Science, 153; Arts, 137; Medicine, 61; Commerce, 14.

The income of the University for the year ending September 30, 1906, was £45,220. From the endowments £8,532 was received, £11,850 from Government grants, £7,003 from Local Authorities' grants, £500 from the Guardians of the Standard of Wrought Plate in Birmingham, £10,568 from students' fees, £1,630 from examination fees, £2,733 from the Day Training College, £813 from the Bacteriological Department, and £1,340 from the School of Brewing. The expenditure came to £47,904. The balance-sheet showed liabilities amounting to £724,040. The assets include £708,228, the balance being made up of cash in hand and at bankers, &c.

It is proposed to provide a new hall of residence for the women students at the University. At the present time not more than twenty-two students can be accommodated in the temporary hostel, and it is desired to provide a home for fifty, at a cost of about £13,000. Already more than £10,000 has been promised. Miss E. G. Powell will give £5,000; Mrs. Charles Dixon and Mr. F. W. V. Mitchell £1,000 each.

Wales. THERE has been some uncertainty as to the conditions under which the Board of Education will accept the Matriculation Examination of the University as an alternative to their Preliminary Examination in the case of students entering training colleges in the autumn of 1907 to be prepared for examinations leading to degrees in Arts or Science. The University has been now informed that the Board will accept the Certificate of Matriculation whether it has been obtained (1) by passing in all the subjects required at the same examination, or (2) by passing the Matriculation Examination in four subjects only and passing in a fifth subject at a subsequent Matriculation Examination, or (3) by presenting a Senior or Honours Certificate or Certificates of the Central Welsh Board containing subjects equivalent to four subjects of the Matriculation Examination and subsequently passing in a fifth subject at the Matriculation Examination, or (4) by presenting a Senior or Honours Certificate or Certificates of the Central Welsh Board containing all the subjects required in the Matriculation Examination. The conditions under which the Matriculation Examination will be recognized in the case of students entering training colleges in 1908 and subsequent years have not yet been determined, and will be announced later.

Glasgow. AT a recent meeting of the University Court a statement was submitted on the subject of the extended session and the reconstruction of the Arts curriculum. The recommendations were considered, and resolutions were adopted to the effect that advantage would result from the adoption of a session of three terms of at least twenty-five weeks; that ordinary class meetings should be not less than seventy-five; that the number of Honour class meetings in each session be not less than fifty, provided that in certain subjects (to be determined by each University) a student shall be able to qualify for the degree in two of the three proposed terms; that no degree examination be held within the teaching session; that the curriculum for the ordinary degree shall consist of either five or six subjects under regulations specified; that the regulations regarding grouping of subjects for a curriculum in Arts, ordinary or Honours, be determined by the Senatus of each University, after consultation with the Faculty of Arts and the Arts Faculties of other universities, and subject to the approval of the University Court.

MEETING OF THE COUNCIL OF THE COLLEGE OF PRECEPTORS.

A MEETING of the Council was held at the College, Bloomsbury Square, on February 16. Present: Mr. E. A. Butler, Vice-President, in the chair; Prof. Adams, Dr. Armitage-Smith, Rev. J. O. Bevan, Rev. J. B. Blomfield, Mr. Bowen, Mr. Charles, Mr. Eve, Mr. Hawe, Miss Jebb, Rev. G. E. Mackie, Sir Philip Magnus, Dr. Maples, Dr. Moody, Mr. Morgan, Miss Punnett, Mr. Rule, Mr. Rushbrooke, Rev. Dr. Scott, Mr. Starbuck, Mr. Vincent, and Mr. White.

The minutes of the last meeting were read and confirmed.

Diplomas were granted to the successful candidates at the Christmas Examination of Teachers (see list, page 120). The Prizes for Mathematics and Natural Sciences were awarded to Mr. J. Carson Nixon.

The report of the Finance Committee was adopted.

The report of the Examination Committee was adopted, and Mr. H. W. Atkinson, M.A., and Mr. E. Ruf, B. ès L., were appointed additional Examiners in French.

The Fellowship of the College, *honoris causâ*, was conferred on the Rev. Canon Bell and Mr. F. Storr.

Dr. R. Wormell was re-elected President of the Council, and Sir Philip Magnus, M.P., Mr. E. A. Butler, and the Rev. Canon Bell Vice-Presidents. Mr. H. W. Eve was reappointed Dean, and Mr. G. Armitage Smith Treasurer, of the College.

The Moderators and Examiners for the year 1907 were appointed.

The following persons were elected members of the College:—

Mr. W. J. Addis, M.A. Lond., 16 Houghton Street, Aldwych, W.C.
Mr. G. W. Blunt, L.C.P., The Retreat, Gold Street, Tiverton.
Rev. W. Hendy Cock, B.Sc., L.C.P., St. Luke's College, Exeter.
Mr. W. Crabb, B.Sc., F.C.S., L.C.P., 19 Duppas Hill Terrace, Croydon.
Mr. F. B. Davis, L.C.P., 6 Camberwell Terrace, Leamington.
Mr. C. Finlayson, McKean Street, North Fitzroy, Melbourne.
Mr. J. G. Hamilton, B.A., 58 Lessar Avenue, Clapham, S.W.
Mr. G. W. Sibly, M.A., Wycliffe College, Stonehouse, Glos.
Mr. S. H. Still, Emwell School, Warminster.
Mr. T. Stubbins, L.C.P., Commercial Travellers' School, Pinner.

The following books had been presented to the Library since the last meeting of Council:—

By the AUTHOR.—Bayles' L'Anglais par les Exemples, Correspondance Commerciale Anglaise, Cours Pratique d'Anglais Commercial, Practical Exercises in Commercial French, Manuel Commercial Français-Anglais, Manuel Commercial Français-Espagnol, Anglo-Spanish Manual of Commercial Correspondence, Produits Commerciaux, Parts I. and II.; Short Cuts in Arithmetic, Manuel Anglais-Français des Expressions Minières, Interpreter Superseded (English-French).

By the GENERAL MEDICAL COUNCIL.—Minutes of the Medical Council, 1906.

By EDWARD ARNOLD.—Arnold's Lectures Françaises, Books I. and II., and Modern French, Book II.; Playne and Fawdry's Practical Trigonometry; Stobart's The Pope Epoch; Weber's Vier kleine Lustspiele.

By G. BELL & SONS.—The York Poetry Books (I. and II.); Tales from Shakespeare; Stories of King Arthur; Baker and Bourne's First Geometry; Guthkelch's Essays and Letters of Charles Lamb; Young's First Year's Course in Geometry and Physics.

By A. & C. BLACK.—Black's Literary Readers, Book II.; and Picture Lessons in English, Book II.

By BLACKIE & SON.—Blackie's New Concentric Arithmetics, Book IV.; English County Supplementary Readers (North Midlands); The Plain-Text Shakespeare (As You Like It, Coriolanus, Hamlet, Henry V., Julius Caesar, King John, Macbeth, Merchant of Venice, Midsummer Night's Dream, Richard II., Richard III., Tempest, Twelfth Night); Blackie's English School Texts (Julian the Apostate; Macaulay's Essay on Clive, Essay on Warren Hastings, and Second Essay on Pitt; Prescott's Montezuma); Blackie's Latin Texts (Caesar's Gallic War, II., III., and IV.; Virgil's Georgics, I. and II.); Brereton's Sedaine's Le Philosophe sans le Savoir; Chaucer's Prologue; Clarke's Racine's Athalie; Findlay's Dewey's The School and the Child; Hainsselin's Fleur de Neige; Lafitte's Selections from La Bruyère's Les Caractères; Roberts' Milton's Paradise Lost, Book IV.; Saunderson's History of the British Empire; Weekley's Bechstein's Märchen; Wilsden's The Teaching of English Grammar and Elementary Latin; Winbolt's Josephus).

By the CAMBRIDGE UNIVERSITY PRESS.—Breul's Teaching of Modern Foreign Languages and the Training of Teachers; Edmonds's Introduction to Comparative Philology; Eve's Corneille's Le Cid; Williams's Colossians and Philemon (Cambridge Greek Testament).

By MACMILLAN & CO.—Jones's First Latin Book; Rowe and Webb's Tennyson's Tiresias, and other Poems; Wilson's Macé's Le Petit Ravageot.

By METHUEN & CO.—Clough and Dunstan's Elementary Science for Pupil-Teachers; Crofts' Dumas' L'Histoire d'une Tulipe; Rahtz's Higher English; Rhoades' De Ségur's Mémoires de Cadichon; Rieu's La Chanson de Roland; Wilson's Laboulaye's Abdallah.

By the OXFORD UNIVERSITY PRESS.—De Baudiss's Choix de Lettres Parisiennes de Mme. de Girardin; De Sélincourt's De Balzac's Pierrette.

By G. PHILIP & SON.—Mackinder's Our Island Home, Parts I. and II.

By RIVINGTONS.—Hartog's Galland's Sindbad le Marin; Labiche, Lefranc et Jessé's Le Major Cravachon; Scribe's Valérie; Scribe et Delavigne's Le Diplomate.

By the UNIVERSITY TUTORIAL PRESS.—University Correspondent, 1906; Matriculation Directory, January, 1907; Davidge and Hutchinson's Technical Electricity.

Calendars of the Pharmaceutical Society of Great Britain, University of Wales, University of Liverpool, and University College, Nottingham.

COLLEGE OF PRECEPTORS. TEACHERS' DIPLOMA EXAMINATION.

Christmas, 1906.

The Christmas Examination commenced on the 31st of December and was held in London and at the following Local Centres:—Ahmedabad, Belfast, Birmingham, Bristol, Cape Town, East London, Georgetown (British Guiana), Graiguenamanagh, Guernsey, Hong Kong, Jharipani, Leeds, Liverpool, Manchester, Newcastle-on-Tyne, Plymouth, South Molton.

The total number of candidates examined was 607.

The following are the names of the candidates who passed in the various subjects: (*hon.*) attached to a name, or to a letter denoting a subject, indicates that the candidate obtained Honours in the subject:—

Theory and Practice of Education.

Fellowship.

Dumville, B.
Hampshire, H.

Licentiateship.

Armstrong, W. E.
Ashman, E. H. W.
Baldock, G.
Barton, John (*Accrington*).
Beacroft, A.
Boswell, H. H.
Broadbent, J. H.
Brown, J. S.
Cobbett, C. W.
Dellow, H. N.
Dorward, J. W.
Gossling, W. J. J.
Grey, R. E.
Hanton, S. B.
Harding, Miss J. D.
Hudson, F. M.
Jennings, W. E. St. J.
Johnson, H. O.
Lincoln, D. S.
Long, A. T.
MacGregor, G.
McCallister, W. J.
Meehan, J.
Morgan, A.
Nixon, John Carson.
Osborne, G. B.
Raybould, A.
Sayles, C. P.
Tedstone, J. L.
Thurston, H. G.
Tonkin, T. S.
Williams, G. J.
Willis, Miss C. A.
Wilson, T. W.
Wood, Miss F. A.
Wyer, T. J. H. W.

Associateship.

Alderson, J. A.
Allen, Miss R.
Allwood, Miss M. G.
Amery, J. H.
Andain, F. J.
Andrews, A. G.
Andrews, C. H.
Applebee, F. J.
Ashford, Miss M. M. E.
Ayles, Miss E.
Baker, C. E.
Baker, Miss E. M. E.
Barrass, C.
Bechervaise, A.
Beeley, Miss H.
Beevers, D.
Benson, A.
Bentley, F. H.
Betbèder-Talon, Miss T. A.
Birch, H. T.
Birch, Miss S. A.
Blomfield, Miss E.
Bloxham, Miss O. M.
Boddie, Miss M. W.
Boltwood, H. G.
Bostock, E.
Bowyer, J. S.
Brading, B. E. W.
Breakell, Miss E.
Brewer, O. J.
Bryant, G. H.
Budd, H. S.
Caff, Miss M. B.
Callaghan, J. P.
Campbell, Miss M.
Charnock, Miss M. J.
Chatterley, W. M.
Cheshire, Miss I.
Clough, Miss A.
Cockrell, Miss B. E.
Cole, G.
Collens, Miss G. E.
Collins, D. L.
Conboy, Miss C.
Cooke, E. J. A.
Cosgrave, W. J.
Cossins, Miss F.
Crampton, Miss G.
Creaton, Miss F. K.
Crichton, Miss A. T.
Davies, Miss A.
Davies, W. E.
Delaney, Miss C. E.
Dolton, W. N.
Doughty, Miss A.
Dowling, Miss S.
Edge, Miss E. A.
Elliott, Miss M. J.
Evans, A. V.
Evans, Miss J. L.
Everard, T. B.
Exell, F. G.
Farndon, W. E.
Farrington, Miss J.
Fenn, E. F.
Fernley, W. R.
Firth, E.
Fish, Miss A. B.
Fitz-Gerald, M.
Fletcher, T. J. B.
Flood, C.
Forgan, Miss A.
Forgan, Miss F. A.
Frost, Miss D. E.
Gard, F. W.
Gawthorpe, J.
Gerhardt, Miss G. M.
Gibson, W. R.
Gilbert, Miss L. E.
Gillard, W. J.
Greene, Miss C. F.
Griffiths, Miss L.
Gwyther, L. M.
Hamer, E. F.
Hamer, Miss S. A.
Hammond, Miss A. E.
Harcourt, Miss B. M.
Harvey, Miss A.
Hasshagen, A. F.
Haysman, J. H.
Heath, E. F.
Heathcote, C. J.
Hellyer, Miss J. S.
Heppleston, A.
Heslop, C.
Hodgkins, Miss F. F. M.
Hope, Miss M. E.
Hopkins, Miss F. C.
Hudson, C. W.
Hurst, Miss F. E.
Jacobsen, Miss G. E.
Jenkinson, F. W.
Jenks, F. A.
Johns, H. J.
Jones, Miss A. G.
Jones, Miss S. F.
Keenan, J. T.
Kelland, Miss A.
Kershaw, Miss H.
Killick, Miss A. E.,
King, Miss M. J.
Kirkwood, Miss M. E.
Knight, W.
Knox, J. W.
La Galle, Miss M. F.
Lamb, Mrs. L.
Lawrence, Mrs. A.
Leatham, A. E.
Leathwood, W.
Leighton, Miss C. A. M.
Lill, F. H.
Little, A. J.
Longstaffe, Miss V. E.
Lucock, Miss M.
Lummis, Miss C. E.
Lupton, E. E.
Lymbery, P. A. R.
Macdonald, Miss C. E.
Matheson, J.
Matthew, Miss M.
Matthews, J. H.
Mitchell, L.
Mollison, Miss M. A.
Moorby, Miss C. W.
Moores, H.
Newnham, J. F. W.
North, Miss J.
Ogle, Miss E. R.
Olivey, Miss R. M.
Owen, E. T.
Palmer, B.
Papworth, W. F.
Parker, Miss Helena.
Peake, Miss H.
Peel, Miss M.
Pettet, H. F.
Phillips, H. H.
Pickford, E.
Plumb, Miss N.
Potterton, Miss E.
Pratt, A. M.
Price, Miss M. F.
Pritchard, F. J.
Prowse, S. P.
Puddephatt, Miss O. E.
Pullen, Miss R. E.
Purves, D. T.
Randall, Mrs. S. F.
Reid, Miss W. N.
Robertson, Miss A. B.
Robinson, S.
Robson, Miss F.
Roper, Miss J. M.
Sainsbury, H. G.
Sanders, J.
Scoble, Miss A. M.
Screen, R.
Seeviour, G. C.
Simpson, G. W.
Smedley, F.
Smith, Miss A. A.
Smith, Miss S.
Southwell, H. E.
Southwell, Miss M. E.
Sproston, A. E.
Stables, C.
Stedman, P. H.
Steele, Miss F. E.
Stepney, Miss E. E.
Stepney, Miss M.
Stobart, M.
Stone, F. N.
Stowe, W. W.
Sturgeon, Miss S. L.
Tankard, F. C.
Tanner, D. T.
Taylor, G. W.
Thompson, E. W.
Thornton, Miss A.
Tildesley, Miss N.
Tindall, Miss E. M.
Tipping, Miss E. M.
Travis, Miss A. A.
Trotter, D. K.
Turner, Mrs. M. S.
Turner, Miss S. A.
Tye, W.
Vaughan, J. J.
Verrinder, C. H.
Vose, H. S.
Wager, Miss E. M.
Wakefield, Miss M. A.
Walker, Miss M. A.
Walter, Miss A. S.
Wardhaugh, T. W.
Warner, Mrs. M. C. M.
Warwick, Miss A. C. S.
Watts, A.
Westlake, Miss I.
White, Miss F. E.
Whitehead, Miss M. J.
Whittingham, J. F.
Whymark, M. H. J.
Williams, D. L.
Williams, Miss E. A.
Williams, J. W. H.
Williams, Miss M. H.
Windo, P. C.
Wise, C. H.
Woodhouse, Miss M.
Woodman, W. G.
Woolley, Miss A. G.
Worts, Miss D.
Wrenn, Miss L. C.
Wright, Miss E.
Wright, H.
Yeoman, Miss E. A.
Yockney, Mrs. C. H.
Youhill, J. C.
Young, Miss S.

English.

(*Subject No.* 1.)

Abbott, Miss M. H.
Allen, R.
Baker, C. E.
Beech, Miss C.
Beer, Miss E. B.
Benson, Miss E. C.
Blackman, E. E. S.
Brelsford, W. A.
Cartwright, C.
Chadwick, G. R.
Chatterley, W. M.
Cheshire, Miss I.
Clarke, J. E.
Cook, A.
Cosgrave, W. J.
Cumings, Miss H. G. P.
Cuthbert, J.
Davies, Miss M. M.
Dolton, W. N.
Donne, Miss H.
Donnelly, Miss C.
Draper, Miss H.
Edwards, J.
Elliott, Miss M. J. (*hon.*)
Elphick, Miss G. C.
Evans, A. V.
Ferguson, Miss F. A.
Flamank, Miss B.
Gardner, Miss C. A.
Gibson, W. R.
Gwennap, C.
Halfyard, Miss A.
Harcourt, Miss B. M.
Harper, G. R.
Hasshagen, A. F.
Haysman, J. H.
Hiddleston, Miss M.
Hopkins, Miss F. C.
Kimber, Mrs. F. C.
Lummis, Miss C. E.
Matheson, J.
Mitchell, A. M.
Moynan, Miss N.
Newington, G. C.
Newnham, J. F. W.
Palmer, B.
Pratt, A. M.
Rawling, Mrs. J.
Rawlinson, C. S.
Reynolds-Major, E H.
Roberts, H.
Robinson, C. A.
Robinson, S.
Robinson, W. E. (*hon.*)
Ross, Miss E.
Rowland, J. W.
Saunders, T. S.
Shaw, C.
Simcoe, Miss G. E.
Skeet, G. W.
Smallwood, Miss G.
Smart, J.
Spence, Miss M.
Stables, C.
Starford, R. B.
Stepney, Miss E. E.
Stobart, M.
Stowe, W. W.
Tankard, F. C.
Thompson, E. W.
Thomson, Miss J.
Tole, H. A.
Trotter, D. K.
Turner, W. H.
Wall, C. E.
Warner, Mrs. M. C. M.
Wheeley, E. A.
Whelan, W. P.
Wiles, Miss E. E.
Williams, Miss F. A.
Williams, J. E.
Williams, J. W. H.
Woodger, F. H.
Youhill, J. C.
Young, Miss M. S.

English History.

Abbott, Miss M. H.
Andain, F. J.
Barnett, Miss L.
Beech, Miss C.
Benson, Miss E. C.
Bentley, F. H.
Birch, Miss S. A.
Bowen, D.
Brelsford, W. A.
Brooks, H. J.
Cartwright, C.
Chadwick, M.
Charlesworth, J. W.
Chatterley, W. M.
Collens, Miss G. E.
Connolly, Miss D.
Cosgrave, W. J.
Culshaw, W. H.
Cumings, Miss H. G. P.
Davies, E.
Dixon, Miss E.
Dolton, W. N.
Donne, Miss H.
Donnelly, Miss K.
Dowling, Miss S.
Edwards, J.
Elliott, Miss M. J.
Elphick, Miss G. C.
Ferguson, Miss F. A.
Fisher, Miss A. L.
Fitzwater, Miss L. H. P.
Fletcher, T. J. B.
Gannon, J.
Gibson, W. R.
Gilling, Miss L.
Grey, R. E.
Guest, A. P.
Gwennap, C.
Halfyard, Miss A.
Harcourt, Miss B. M.
Hart, L. S.
Head, Miss B. M. M.
Hebden, J. L.
Hellyer, Miss J. S.
Hobson, H.
Jacobsen, Miss G. E.
Keenan, J. T.
Lang, E.
Lensh, W. F.
Lummis, Miss C. E.
Lyon, P. S.
Maxted, A. J. S.
May, F.
McMillian, Miss A.
Moorby, Miss C. W.
Morrish, Miss E.
Nevard, Miss L. M.
Palmer, B.
Palmer, J. H.
Pratt, A. M.
Pritchard, F. J.
Purves, D. T.
Ramsay, A. M.
Rawling, Mrs. J.
Reilly, J.
Richardson, Miss A. M.
Robinson, C. A
Robinson, S.
Ross, Miss E.
Rowland, J. W.
Salter, Miss A. M.
Saunders, T. S.
Scarlett, E. J.
Scollen, Miss M. E.
Skeet, G. W.
Slack, R. W.
Smallwood, Miss G.
Smart, J.
Starford, R. B.
Stobart, M.
Stowe, W. W.
Strong, J. L.
Taylor, G. W.
Thompson, E. W.
Tipper, D.
Tole, H. A.
Turton, Miss C. E.
Wall, C. E.
Warner, Mrs. M. C. M.
Weaver, Miss E. E.
Whelan, W. P.
Williams, Miss F. A.
Williams, J. W. H.
Wood, J.
Youhill, J. C. (*hon.*)

Geography.

Allwood, T. E.
Andain, F. J.
Baker, C. E.
Beech, Miss C.
Beer, Miss E. B.
Birch, Miss S. A.
Bowen, D.
Bridgford, Mrs. S. J.
Bryett, Miss C. M.
Chatterley, W. M.
Cheshire, Miss I.
Cook, A.
Cosgrave, W. J.
Cumings, Miss H. G. P.
Davies, Miss M. M.
Dixon, Miss E.
Dolton, W. N.
Donne, Miss H.
Donnelly, Miss K.
Edginton, Miss E. M.
Edwards, Miss D. C. B.
Edwards, J.
Elliott, Miss M. J.
Everett, W. M.
Ferguson, Miss F. A.
Fitzwater, Miss L. H. P.
Fletcher, T. J. B.
Gibson, W. R.
Grey, R. E.
Halfyard, Miss A.
Harcourt, Miss B. M.
Harper, G. R.
Harrison, F.
Hart, L. S.
Haysman, J. H.
Heard, F. C. (*hon.*)
Hopkins, Miss F. C.
Jenkins, R.
Keenan, J. T.
Lang, E.
Langford, A. G.
Leatham, A. E.
Livesey, Miss A. E.
Lummis, Miss C. E.
Markham, G.
Matheson, J.
Maxted, A. J. S.
Newnham, J. F. W.
Palmer, B.
Pitt, E. J. C.
Pratt, A. M. (*hon.*)
Purves, D. T.

Geography—(*contd.*).
Reid, Miss W. N.
Robinson, C. A.
Robinson, S.
Rowland, J. W.
Sanders, J.
Saunders, T. S.
Scarlett, E. J.
Slack, R. W.
Smallwood, Miss G.
Smart, J.
Southwell, Miss M. E.
Stables, C. (*hon.*)
Stapleton, A. F. St. C.
Starford, R. B. (*hon.*)
Stedman, P. H.
Stepney, Miss E. E.
Stobart, M.
Stowe, W. W.
Tankard, F. C.
Taylor, G. W.
Thompson, E. W.
Tresidder, J. M.
Trotter, D. K.
Turley, F.
Wall, C. E.
Warner, Mrs. M C. M.
Wheeley, E. A.
Whelan, W. P.
Wiles, Miss E. E.
Williams, Miss F. A.
Williams, J. E.
Wise, C. H.
Youhill, J. C.
Young, Miss M. S.

Arithmetic.

Allen, R.
Allwood, T. E.
Ayton, Miss F. J.
Baker, C. E.
Beech, Miss C.
Bridgford, Mrs. S. J.
Burt, Miss M. M.
Champion, S.
Charlesworth, J. W.
Chatterley, W. M.
Cheshire, Miss I.
Collens, Miss G. E.
Cosgrave, W. J.
Craven, T. W.
Culshaw, W. H.
Cumings, Miss H. G. P.
Davies, Miss A.
Davies, E.
Dolton, W. N.
Donne, Miss H.
Edginton, Miss E. M.
Edwards, J.
Elliott, Miss M. J.
Everett, W. M.
Fernley, W. R.
Fisher, Miss A. L.
Fitzwater, Miss L. H. P.
Fletcher, T. J. B.
French, Miss A. T.
Garland, J. G.
Gibson, M. R.
Goss, R. J.
Grey, R. E.
Guest, A. P.
Haffner, Miss T.
Halfyard, Miss A.
Harcourt, Miss B. M.
Hart, L. S.
Haysman, J. H.
Hellyer, Miss J. S.
Hiddleston, Miss M.
Hobson, H.
Ibbotson, G. H.
Jacobsen, Miss G. E.
Jagger, D. E.
Keenan, J. T.
Lang, E.
Langford, A. G.
Leatham, A. E.
Lummis, Miss C. E.
Mardon, W. J. T.
Markham, G.
Mitchell, A. M.
Moorby, Miss C. W.
Morrish, Miss E.
Nessi, Miss H.
Newnham, J. F. W.
Niederleithner, F.
Orme, Miss S. E.
Palmer, B.
Pitt, E. J. C.
Pratt, A. M.
Pritchard, F. J.
Purves, D. T.
Ramsay, A. M.
Rant, Miss G. M.
Reilly, J.
Robinson, C. A.
Robinson, S.
Ross, Miss E.
Salter, Miss A. M.
Saunders, T. S.
Scarlett, E. J.
Simcoe, Miss G. E.
Slack, R. W.
Smallwood, Miss G.
Smart, J.
Smith, Miss A. A.
Smith, E. J.
Stables, C.
Staines, Miss K. E,
Starford, R. B.
Stevens, W. S.
Stobart, M.
Stowe, M. M.
Tankard, F. C.
Thompson, E. W.
Thomson, Miss J.
Tipper, D.
Tole, H. A.
Trotter, D. K.
Turley, F.
Turton, Miss C. E.
Wall, C. E. (*hon.*).
Warner, Mrs. M. C. M.
Warwick, Miss A. C. S.
Wheeley, E. A.
White, Miss M. H.
Whymark, M. H. J.
Williams, J. W. H.
Wise, C. H.
Woodman, W. G.
Youhill, J. C.
Young, Miss M. S.

Mathematics.

FELLOWSHIP.
Littler, W.
Smith, G. S.

LICENTIATESHIP.
Nixon, John Carson (*hon. algebra and trigonometry.*)
Osborne, G. B. (*hon. algebra.*)

ASSOCIATESHIP.
Bateman, T. H.
Bowen, D.
Cartwright, C.
Culshaw, W. H.
Dolton, W. N.
Edwards, J.
Elliott, J.
Evans, A. V.
Gannon, J.
Gibson, W. R.
Guest, A. P.
Hobson, H.
Howcroft, E. J.
Jones, H. S.
Jump, W.
Lang, E.
Leatham, A. E.
Matheson, J.
Newnham, J. F. W.
Pettet, H. F.
Pitt, E. J. C.
Pratt, A. M.
Sainsbury, H. G.
Stowe, W. W. (*hon. algebra*)
Thompson, E. W.
Trotter, D. K.
Wall, C. E. (*hon. algebra and geometry*)
Wheeley, E. A.
White, B. C.
Woodger, F. H.
Youhill, J. C.

Algebra.*

LICENTIATESHIP.
Goss, R. J.

Geometry.*

LICENTIATESHIP.
Twigg, T. L.

Conics.*

LICENTIATESHIP.
Shaw, F. A.

Languages.

e. = Higher English,
f. = French, *g.* = German,
l. = Latin, *s* = Spanish.

FELLOWSHIP.
Naumann, Miss E. *f.* (*hon.*), *g.* (*hon.*)

LICENTIATESHIP.
Cahill, Miss M. *e.f.*
Cantrell, Mrs. E. H. *e.f.* (*hon.*)
Davies, Miss M. M. *e.f.* (*hon*)
Ellis, Miss M. *f.l.*
Gossling, W. J. J. *e.f.*
Loftus, E. A. *f.l.*
Meehan, J. *f.l.*
Morgan, A. *e.l.*
Moynan, Miss N. *e.f.*
Traylen, Miss M. *e.f.*
Waller, Miss M. A. R. *e.f.*

ASSOCIATESHIP.
Cosgrave, W. J. *f.*
Edginton, Miss. E. M. *f.*
Elliott, Miss M. J. *f.*
Flamank, Miss B. *g.*
Haffner, Miss T. *f.*
Halfyard, Miss A. *f.*
Harcourt, Miss B. M. *l.*
Ide, Miss E. *f.*
Kirkwood, Miss M. E. *f.*
Lensh, W. F. *f.*
Reid, Miss W. N. *l.*
Stables, C. *f.*
Teece, T. F. *s.*
Thomas, Miss E. *g.*
Thomson, Miss J. *f.*
Walton, Miss M. *f.*
Williams, Miss F. A. *f.*
Yates, N. C. *f.*

Higher English.*

LICENTIATESHIP.
Wilson, T. W.

German.*

Whitbread, F. J.

Science.

b. = Botany.
ch. = Chemistry,
g. = Geology.
m. = Mechanics.
p. = Experimental Physics.
ph. = Animal Physiology.

FELLOWSHIP.
Littler, W. *p.ch.*
Smith, G. S. *ph.ch.*

LICENTIATESHIP.
Billowes, H. *ph.b.*
Davis, P. J. *ch.b.*
Greenough, Miss E. M. *p.m.* (*hon.*)
Handover, Miss K. L. *p.b.* (*hon.*)
Mitchell, A. M. *ph.b.*
Monkhouse, J. A. *ph.b.*
Nixon, John Carson *m.* (*hon.*) *ch.*
Osborne, G. B. *m.ch.*
Sayles, C. P. *p.g.*
Tedstone, J. L. *p.ph.*
Warner, S. F. *ph.b.*

ASSOCIATESHIP.
Allen, R. *ph.b.*
Allwood, T. E. *ch.b.*
Beech, Miss C. *ph.b.*
Bentley, F. H. *p.ph.*
Birch, Miss S. A. *ph.b.*
Butler, Mis A. *ph.b.* (*hon.*)
Chadwick, M. *p.ph.*
Chatterley, W. M. *ph.b.*
Cheshire, Miss I. *ch.ph.*
Cosgrave, W. J. *ch.ph.*
Fernley, W. R. *ch.b.*
Hopkins, Miss F. C. *ph.b.*
Kimber, Mrs. F. C. *ph.b.*
Kirk, J. J. *ph.b.* (*hon.*).
North, Miss J. *ph.b.*
Palmer, B. *p.ch.*
Roberts, C. *ph.g.*
Rowland, J. W. *p.*(*hon.*)*ch.*
Sidwell, W. T. *ph.b.*
Smallwood, Miss G. *ph.b.*
Smart, J. *ch.ph.*
Walter, Miss A. S. *ph.b.*
Whelan, W. P. *ch.ph.*
Wise, C. H. *p.ch.*
Wood, J. *ch.ph.*

Experimental Physics.*

LICENTIATESHIP.
Whitbread, F. J.

Botany.*

LICENTIATESHIP.
Bilsborrow, Miss H.
Gordon, T. W.

Animal Physiology.*

LICENTIATESHIP.
Pass, G. J.

* *Under Old Regulations.*

Diplomas were awarded to the following, who had satisfied all the prescribed conditions :—

FELLOWSHIP.
Dumville, B.

LICENTIATESHIP.
Baldock, G.
Brown, J. S.
Ellis, Miss M.
Gordon, T. W.
Harding, Miss J. D.
Jennings, W. E. St. J.
Johnson, H. O.
Loftus, E. A.
Long, A. T.
MacGregor, G.
McCallister, W. J.
Nixon, J. Carson.
Osborne, G. B.
Shaw, F. A.
Tonkin, T. S.
Williams, G. J.
Willis, Miss C. A.
Wilson, T. W.
Wyer, T. J. H. W.

ASSOCIATESHIP.
Alderson, J. A.
Allen, Miss R.
Allwood, Miss M. G.
Amery, J. H.
Andrews, A. G.
Andrews, C. H.
Applebee, F. J.
Ashford, Miss M. M. E.
Ayles, Miss E.
Beech, Miss C.
Beeley, Miss H.
Beevers, D.
Benson, A.
Bentley, F. H.
Birch, H. T.
Blomfield, Miss E.
Boddie, Miss M. W.
Boltwood, H. G.
Bostock, E.
Brading, B. E. W.
Breakell, Miss E.
Brewer, O. J.
Bryant, G. H.
Budd, H. S.
Burt, Miss M. M.
Butler, Miss A.
Caff, Miss M. B.
Callaghan, J. P.
Campbell, Miss M.
Cartwright, C.
Chadwick, M.
Charnock, Miss M. J.
Chatterley, W. M.
Clarke, J. E.
Clough, Miss A.
Cockrell, Miss B. E.
Cole, G.
Collins, D. L.
Conboy, Miss C.
Cooke, E. J. A.
Cosgrave, W. J.
Crampton, Miss G.
Creaton, Miss F. K.
Crichton, Miss A. T.
Davies, W. E.
Delaney, Miss C. E.
Dolton, W. N.
Donnelly, Miss K.
Doughty, Miss A.
Draper, Miss H.
Edge, Miss E. A.
Elliott, J.
Elliott, Miss M. J.
Evans, Miss J. L.
Exell, F. G.
Farndon, W. E.
Farrington, Miss J.
Fenn, E. F.
Firth, E.
Fish, Miss A. B.
Fisher, Miss A. L.
Fitzwater, Miss L. H. P.
Flood, C.
Forgan, Miss A.
Forgan, Miss F. A.
Frost, Miss D. E.
Gard, F. W.
Gawthorpe, J.
Gerhardt, Miss G. M.
Gibson, W. R.
Gillard, W. J.
Greene, Miss C. F.
Griffiths, Miss L.
Gwyther, L. M.
Haffner, Miss T.
Hamer, E. F.
Hamer, Miss S. A.
Hammond, Miss A. E.
Harcourt, Miss B. M.
Harvey, Miss A.
Heath, E. F.
Heathcote, C. J.
Heppleston, A.
Hodgkins, Miss F. F. M.
Hope, Miss M. E.
Hurst, Miss F. E.
Ibbotson, G. H.
Jacobsen, Miss G. E.
Jenkinson, F. W.
Jenks, F. A.
Johns, H. J.
Jones, Miss A. G.
Jones, Miss S. F.
Jump, W.
Kelland, Miss A.
Kershaw, Miss H.
Killick, Miss A. E.
Kimber, Mrs. F. C.
King, Miss M. J.
Knight, W.
Knox, J. W.
La Galle, Miss M. F.
Lawrence, Mrs. A.
Leathwood, W.
Leighton, Miss C. A. M.
Lill, F. H.
Little, A. J.
Lucock, Miss M.
Lupton, E. E.
Lymbery, P. A. R.
Macdonald, Miss C. E.
Matthew, Miss M.
Matthews, J. H.
May, F.
Mitchell, L.
Mollison, Miss M. A.
Moores, H.
Ogle, Miss E. R.
Olivey, Miss R. M.
Owen, E. T.
Palmer, B.
Papworth, W. F.
Parker, Miss Helena.
Peake, Miss H.
Peel, Miss M.
Pettet, H. F.
Phillips, H. H.
Plumb, Miss N.
Potterton, Miss E.
Pratt, A. M.
Price, Miss M. F.
Prowse, S. P.
Puddephatt, Miss O. E.
Pullen, Miss R. E.
Randall, Mrs. S. F.
Rant, Miss G. M.
Rawlinson, C. S.
Reid, Miss W. N.
Reynolds-Major, E. H.
Roberts, C.
Robertson, Miss A. B.
Robinson, W. E.
Robson, Miss F.
Roper, Miss J. M.
Sainsbury, H. G.
Salter, Miss A. M.
Scoble, Miss A. M.
Screen, R.
Seeviour, G. C.
Sidwell, W. T.
Simpson, G. W.
Smart, J.
Smedley, F.
Smith, Miss S.
Southwell, H. E.
Stapleton, A. F. St. C.
Stedman, P. H.
Stone, F. N.
Stowe, W. W.
Sturgeon, Miss S. L.
Teece, T. F.
Thompson, E. W.
Thornton, Miss A.
Tildesley, Miss N.
Tindall, Miss E. M.
Tipping, Miss E. M
Travis, Miss A. A.
Turner, Mrs. M. S.
Turner, Miss S. A.
Turton, Miss C. E.
Vaughan, J. J.
Vose, H. S.
Wager, Miss E. M.
Wakefield, Miss M. A.
Walker, Miss M. A.
Wardhaugh, T. W.
Watts, A.
Westlake, Miss I.
White, Miss F. E.
Whitehead, Miss M. J.
Whittingham, J. F.
Williams, D. L.
Williams, Miss E. A.
Windo, P. C.
Wood, J.
Woodger, F. H.
Woodhouse, Miss M.
Woodman, W. G.
Woolley, Miss A. G.
Worts, Miss D.
Wrenn, Miss L. C.
Wright, Miss E.
Wright, H.
Yeoman, Miss E. A.
Yockney, Mrs. C. H.
Youhill, J. C.
Young, Miss S.

Prizes for **Mathematics** and **Natural Sciences** were awarded to John Carson Nixon.

COLLEGE OF PRECEPTORS. CERTIFICATE AND LOWER FORMS EXAMINATIONS.

List of Successful Candidates at COLONIAL AND FOREIGN CENTRES, December, 1906.

CERTIFICATE EXAMINATION,

N.B.—The small italic letters denote that the candidate to whose name they are attached was distinguished in the following subjects respectively:—

a. = Arithmetic.	*gm.* = Geometry.
al. = Algebra.	*h.* = History.
bk. = Book-keeping.	*he.* = Hebrew.
ch. = Chemistry.	*l.* = Latin.
d. = Drawing.	*mu.* = Music.
du. = Dutch.	*ph.* = Physiology.
e. = English.	*s.* = Scripture.
f. = French.	*sh.* = Shorthand.
g. = Geography.	*sp.* = Spanish.

The small figures [1] and [2] prefixed to names in the Second and Third Class lists denote that the candidates were entered for the First and Second Classes respectively.

Bracketing of names denotes equality.

In the addresses,

Acad. = Academy.	Gram. = Grammar.
Coll. = College.	Inst. = Institute.
Conv. = Convent.	S. = School.

BOYS.

First Class [or Senior].—Pass Division.

Nurse, J.F.DeW. — Private tuition

Second Class [or Junior].—Honours Division.

Bain, I.D. *a.bk.* — Grenada Gram. S.
Guillanme, A.M. — Grenada Gram. S.
Steele, E.E. — Grenada Gram. S.

Second Class [or Junior].—Pass Division.

Rathouse, A. *f.* — Marist Bros.' S., Johannesburg
[1]Solomon, D. *s.* — Norris Coll., Rangoon
Friedman, P. *a.al.* — Marist Bros.' S., Johannesburg
Braseh, A. — Marist Bros.' S., Johannesburg
Gresham, L.F. — Grenada Gram. S.
Viechweg, W.T. — Private tuition
St. John, G.P.A. — Private tuition
Cohen, J. — Marist Bros.' S., Johannesburg
[1]Johnson, L.R. — Wesleyan High S., Freetown, Sierra Leone
Preseod, C.W. *bk.sh.* — Georgetown S., St. Vincent
Mounier, A. *f.* — Marist Bros.' Coll., Uitenhage
Soulier, H. *f.ch.* — Marist Bros.' S., Johannesburg
Nevill, H.L.E. — Marist Bros.' S., Cala
[1]Harbin, J.P.B. — St. George's, Grenada
Damodaram, S. — Norris Coll., Rangoon
Ajose, C.A. — Wesleyan Boys' High S., Lagos
Loewenstein, G.L. — Marist Bros.' Coll., Uitenhage
Purushothum, V. — Norris Coll., Rangoon
[1]Aruldassen, G. — Norris Coll., Rangoon
Don Robert, B.A. — Private tuition
Aulavanthar, R. — Norris Coll., Rangoon
Burke, A.M. *al.* — Marist Bros.' Coll., Uitenhage
Raj, M. — Norris Coll., Rangoon
Perera, M.G. — Private tuition
Solomon, E. — Marist Bros.' S., Johannesburg
de Silva, G.F. — Private tuition
Manikavelu, A. — Norris Coll., Rangoon
Peiris, H.R.S. — Central Coll., Colombo
Rintoul, T.F. *al.du.* — Marist Bros.' Coll., Uitenhage
Rupesinghe, L. — Central Coll., Colombo
Arumugam, T.C. — Central Coll., Colombo
[1]Thomas, E.H. — Wesleyan High S., Freetown, Sierra Leone
Thompson, J.A. — Middle S., Georgetown, B. Guiana
Kanagarutnam, W.H. — Wesleyan Central Inst., Batticaloa

Third Class.—Honours Division.

Williams, C.T. *e.h.a.al.bk.l.* — Grenada Gram. S.
Mitchell, V.M. *e.a.al.* — Private tuition
Gunning, J. *e.a.d.* — Marist Bros.' S., Cala
Brereton, R.M. *s.e.h.a.al.* — Brighton Wesleyan S., Calliaqua P.O., St. Vincent
Davidson, P. *e.a.he.* — Marist Bros.' S., Johannesburg
Coek, H. *e.gm.ch.* — Marist Bros.' Coll., Uitenhage
Glean, C.E. *al.f.l.* — Grenada Gram. S.
Andrew, R. *d.* — Private tuition
Reeknagel, O. *e.a.al.gm.* — Marist Bros.' S., Johannesburg
Ross, A.E. *a.d.* — Private tuition
Abraham, I.E. *a.al.d.* — Middle S., Georgetown, B. Guiana
Payne, R.L. *e.* — Grenada Gram. S.
Williams, V. *g.a.al.* — Evesham Wesleyan S., Mesopotamia, St. Vincent
Ferrero, C. *al.ch.* — Marist Bros.' Coll., Uitenhage
Hingle, L. *a.* — Diocesan College S., Pretoria
Antoine, J.F. — Private tuition
Tham, E.E. *l.* — Wesleyan High S., Freetown, Sierra Leone
Geiling, M. *e.a.* — Marist Bros.' Coll., Uitenhage
Romyn, E.A. *gm.* — Diocesan College S., Pretoria
Aspoas, H. — Marist Bros.' S., Johannesburg

Third Class.—Pass Division.

[2]Marais, T.H. *du.* — Diocesan College S., Pretoria
[2]McCrum, R.M. — Lomas Acad., Lomas de Zamora
[2]Hardie, W.S. — Lomas Acad., Lomas de Zamora
[2]Simpson, J. — Diocesan College S., Pretoria
Cowherd, A.B. *a.* — Middle S., Tunapuna, Trinidad
Fugard, W. *a.* — Marist Bros.' High S., Port Elizabeth
Tweedie, G. — Saered Heart Conv., Klerksdorp
Wheeler, F. *e.a.* — Marist Bros.' S., Johannesburg
Andries, G.E. *s.e.a.f.* — Private tuition
Pardini, A. *al.gm.* — Marist Bros.' S., Johannesburg
Harleston, A.T. *a.al.* — Wesleyan High S., Freetown, Sierra Leone
Trow, J.F. *a.al.* — Marist Bros.' S., Cala
Wilson, H. *e.a.al.* — Marist Bros.' S., Cala
Howard, W.I. — Middle S., Tunapnna, Trinidad
Jones, H.M. *s.* — Wesleyan High S., Freetown, Sierra Leone
Fletcher, H.H. *al.* — Marist Bros.' S., Cala
Gibbs, J. — Private tuition
La Bastyde, W.R. *d.* — Private tuition
Mulhall, M. *a.sp.d.* — Lomas Acad., Lomas de Zamora
Waddell, W. — Marist Bros.' S., Cala
Barrow, J.W. *e.a.* — Comenius Secondary S., Georgetown, B. Guiana
Naidoo, T. *a.* — Norris Coll., Rangoon
[2]Veda, R. — Norris Coll., Rangoon
Estill, F. *al.* — Marist Bros.' S., Johannesburg
Ouckama, C.P.A. — Middle S., Georgetown, B. Guiana
[2]Coker, B.D. — Wesleyan High S., Freetown, Sierra Leone
Ponnampalam, S. — Private tuition
Ponnuswamy, K. — Wesleyan Central Inst., Batticaloa
Corkson, W.E. — Wesleyan High S., Freetown, Sierra Leone
Jubber, F. *e.* — Marist Bros.' Coll., Uitenhage
[2]Sivaramakrishna, T. — Norris Coll., Rangoon
Edinberry, C.I. *a.d.* — Marist Bros.' High S., Port Elizabeth
Fung, S. — Private tuition
[2]Gibson, H.L. — Lomas Acad., Lomas de Zamora
Hogg, T. *d.* — Marist Bros.' S., Cala
[2]Nathanson, H. — Private tuition
Veitch, D. — Marist Bros.' S., Johannesburg
Warner, C.H. *gm.d.* — Marist Bros.' S., Cala
Findlay, C.H. *s.e.a.* — Barrouallie Anglican S., St. Vincent
Moffet, L.J. *e.a.* — Marist Bros.' S., Cala
Fletcher, S. *e.a.* — Private tuition
Goller, M. — Marist Bros.' S., Johannesburg
Page, W.R. *e.* — Marist Bros.' S., Cala
Morris, G. *a.al.d.* — Marist Bros.' S., Cala
Thompson, E.E. *a.al.* — Middle S., Georgetown, B. Guiana
[2]Kulentavalu, K. — Wesleyan Central Inst., Batticaloa
Thambiaiyah, M. — Wesleyan Central Inst., Batticaloa
Bishop, W.E. *d.* — Marist Bros.' High S., Port Elizabeth
Muthuvelu — Norris Coll., Rangoon
Paton, G. — Marist Bros.' Coll., Uitenhage
[2]Aldred, W. — Saered Heart Conv., Klerksdorp
[2]de Silva Wickramatileka, C.H. — Central Coll., Colombo
Hinseh, A. *a.* — Marist Bros.' Coll., Uitenhage
Hogg, G. — Marist Bros.' S., Cala
Ross, J.E. — Grenada Gram. S.
[2]Sylvester, R.P. — Private tuition
Browne, W.V. — Middle S., Georgetown, B. Guiana
Robert, V. — Marist Bros.' S., Johannesburg
Goliah, E.I. *al.* — Private tuition
Myah, H. — Norris Coll., Rangoon
Scipio, P. — Evesham Wesleyan S., Mesopotamia, St. Vincent
Tweedie, N. — Marist Bros.' Coll., Uitenhage
Clarke, F. *d.* — Marist Bros.' S., Cala
Johnson, J.M. — Wesleyan High S., Freetown, Sierra Leone
Stafford, J. — Private tuition
Versfeld, L. — Diocesan College S., Pretoria
Donovan, G. — Loreto Conv. S., Lydenburg
Isenberg, L. — Marist Bros.' S., Cala
Cithravaloo, A. *a.* — Central Coll., Colombo
Creppy, J.A. — Wesleyan Boys' High S., Lagos
Jacobs, V. *e.* — Belair Anglican S., Kingstown, St. Vincent
Teubes, K. — Marist Bros.' S., Johannesburg
Borland, A. — Marist Bros.' S., Johannesburg
Thorne, S. — Marist Bros.' Coll., Uitenhage
Wagner, G. — Marist Bros.' Coll., Uitenhage
Goldberg, P. — Marist Bros.' S., Johannesburg
Hardie, J.R. *a.* — Lomas Acad., Lomas de Zamora
Parker, G. — Marist Bros.' Coll., Uitenhage
Callanan, G. — Diocesan College S., Pretoria
Dickinson, J. *e.a.* — Marist Bros.' S., Johannesburg
Franklin, M. — Marist Bros.' S., Johannesburg
Leandro, U.S. *bk.* — St. Stanislaus S., Georgetown, B. Guiana
de Silva, W.T. — Central Coll., Colombo
Lardner, R.E. — Wesleyan High S., Freetown, Sierra Leone
Taylor, A.F. — Wesleyan High S., Freetown, Sierra Leone
[2]Andrews, J.R. — Middle S., Tunapuna, Trinidad
[2]Fernando, P.W. — Central Coll., Colombo
[2]Jayasinghe, D.A. — Central Coll., Colombo
Kunst, E. *a.* — Marist Bros.' High S., Port Elizabeth
Donovan, F.G. — Marist Bros.' Coll., Uitenhage
Drosti, J. — Marist Bros.' S., Johannesburg
[2]Jayawardene, F.P. — St. Paul's Boys' English S., Colombo
[2]John, E.A. — Wesleyan High S., Freetown, Sierra Leone
Pullinger, F. — Marist Bros.' Coll., Uitenhage
Sage, N. — Marist Bros.' Coll., Uitenhage
[2]Fernando, M.S. — St. Paul's Boys' English S., Colombo
[2]Nieolls, S.O. — Wesleyan High S., Freetown, Sierra Leone
Perry, W.G. — Union Island S., St. Vincent
[2]Rajaratnam, A. — Central Coll., Colombo
[2]Anifowose, G.T. — Wesleyan Boys' High S., Lagos
Goldberg, S. — Marist Bros.' S., Johannesbnrg
Levy, H. — Marist Bros.' S., Johannesburg
Griffin, A. — Marist Bros.' Coll., Uitenhage
Johannes, E.C.F. — City Coll., Colombo
Yearwood, R.A. — Middle S., Georgetown, B. Guiana
Robert, E. — Marist Bros.' S., Johannesburg
[2]Luke, J.E. — Wesleyan High S., Freetown, Sierra Leone
Maekenzie, D. *a.* — Diocesan College S., Pretoria
Mohammed Mohamood, A.C. — Central Coll., Colombo
Abdul Rahim, A.C. — Central Coll., Colombo
Bowen, R. — Marist Bros.' S., Johannesburg
Cyril, F.J. — Private tuition
[2]Auber, E.B.W. — Wesleyan High S., Freetown, Sierra Leone
Franeois, L. — Private tuition
Russ, V. — Marist Bros.' Coll., Uitenhage
Sivagnanam, T.C. — Central Coll., Colombo
Armstrong, P.S. — St. Joseph's Inter. S., Bourda, Georgetown, B. Guiana
Roden, E.A. — Marist Bros.' High S., Port Elizabeth
Strang, A. *d.* — Marist Bros.' High S., Port Elizabeth
Sutherland, D.A. — Private tuition
Dawe, A. *a.* — Diocesan College S., Pretoria
Gunn, H. — Marist Bros.' Coll., Uitenhage
Phillips, E.C. *a.* — Middle S., Georgetown, B. Guiana
Walker, J.A. — Biabon Wesleyan S., Bridgetown P.O., St. Vincent
Dixon, H. — Marist Bros.' Coll., Uitenhage
Hardie, V. — Lomas Acad., Lomas de Zamora
Nathan, E. — Marist Bros.' Coll.. Uitenhage
Sutherland, N. — Marist Bros.' S., Johannesburg
Tosu, J.O. — Wesleyan Boys' High S., Lagos
May, J.C. — Wesleyan High S., Freetown, Sierra Leone
Wagner, H. — Marist Bros.' Coll., Uitenhage
Perera, J.F. — City Coll., Colombo
Mohamed, M.T. — St. Paul's Boys' English S., Colombo
Pickett, V. — Marist Bros.' S., Johannesburg
Coker, G.B. — Wesleyan Boys' High S., Lagos
Deans, W. — Marist Bros.' S., Johannesburg
Holder, R.H. — Middle S., Georgetown, B. Guiana
[2]Howlett, W.J. — Diocesan College S., Pretoria
Phipps, J.O. *a.* — Middle S., Tunapuna, Trinidad
Bournes, S.A.L. — Wesleyan High S., Freetown, Sierra Leone
[2]Cumaravalupillai, C. — Central Coll., Colombo
Loveday, C.J.K. — Diocesan College S., Pretoria
Voskule, G. — Marist Bros.' Coll., Uitenhage
Franeis, G. *a.* — Marist Bros.' Coll., Uitenhage
Shmulowitz, E. — Marist Bros.' S., Johannesburg
Youngleson, S. — Marist Bros.' S., Johannesburg

GIRLS.

First Class [or Senior].—Pass Division.

Seally, M. *d.* — St. Joseph's Conv., Port of Spain, Trinidad
Smith, J.M. — Private tuition
Bain, E. *s.e.* — Grenada Gram. S.
Smith, R.D. — Private tuition
Isaac, M. — Norris Coll., Rangoon

Second Class [or Junior].—Honours Division.

du Boulay, M.C. *f.ph.d.* — St. Joseph's Conv., Castries, St. Lucia
Herrera, M. *d.mu.* — St. Joseph's Conv., Port of Spain, Trinidad
Hack, D.E. *a.al.* — Conv. of the Holy Cross, Cala
Sellier, L. *f.* — St. Joseph's Conv., Port of Spain, Trinidad
Caetzee, J.M. *g.du.* — Conv. of the Holy Cross, Cala

Second Class [or Junior].—Pass Division.

[1]Van Straaten, M.E. — Conv. of the Holy Cross, Cala
Kernahan, T. *f.* — St. Joseph's Conv., Port of Spain, Trinidad
Oppenheim, D.M. — Private tuition
Bollers, V. — Ursuline Conv., Georgetown, B. Guiana
Donawa, A. — Private tuition
Abrahams, A. *mu.* — Parktown Conv., Johannesburg
[1]Vogel, F. — Conv. of the Holy Cross, Cala
Donovan, K. — Loreto Conv., Lydenburg
Hall, V.L.M. *h.mu.* — Conv. of the Holy Family, Johannesburg
Bain, M.J.M. — Grenada Gram. S.
Rait, E. — Conv. of the Holy Cross, Cala
McEwen, I. — Conv. of the Holy Family, Johannesburg
Hall, A. *du.* — Conv. of the Holy Cross, Cala
Bertrand, C.A. — Grenada Gram. S.
Sellier, Berthe — St. Joseph's Conv., Port of Spain, Trinidad
Duffy, M.U. — Conv. of the Holy Cross, Cala
Maingot, A. — St. Joseph's Conv., Port of Spain, Trinidad
Levine, G.C. — St. Joseph's Inter. S., Bourda, Georgetown, B. Guiana
Miskin, P. — Conv. of the Holy Cross, Cala
Rubidge, Z. — Saered Heart Conv., Klerksdorp
Clarke, M.L. — Westwood High S., Stewart Town, Jamaica
Martienssen, H. — Parktown Conv., Johannesburg
McNaughthan, J. — Saered Heart Conv., Klerksdorp
Llanos, H. — St. Joseph's Conv., Port of Spain, Trinidad
Fillis, A. — Parktown Conv., Johannesburg
Kersten, S.I. — Conv. of the Holy Cross, Cala

Third Class.—Honours Division.

Boucaud, E. *s.e.a.f.d.* — St. Joseph's Conv., Port of Spain, Trinidad
Belmar, M.T. *s.e.al.f.d.* — St. Joseph's Conv., Castries, St. Lucia
De Gannes, I. *e.g.f.d.* — St. Joseph's Conv., Port of Spain, Trinidad
Verneuil, E. *s.g.al.f.d.* — St. Joseph's Conv., Castries, St. Lucia
Sellier, M. *s.g.f.d.* — St. Joseph's Conv., Port of Spain, Trinidad

GIRLS, 3RD CLASS HONS.—*Continued.*

Knox, C. *s.a.* St. Joseph's Conv., Port of Spain, Trinidad
Andrews, L.M. *f.* Moorhurst, Irene
Boucaud, S. *d.* St. Joseph's Conv., Port of Spain, Trinidad
Catts, E. *e.a.sh.* St. Mary's S., Oakford, Verulam
Turnbull, W.M. *a.f.* Private tuition
Francis, O. *e.* St. Mary's S., Oakford, Verulam
Redhead, E. *a.d.* St. Joseph's Conv. High S., St. George's, Grenada
de' Freitas, E. Conv. of Mercy, Charlestown, Georgetown, B. Guiana
Donawa, S.A. *e.d.* Grenada Gram. S.
Read, C. *a.d.* Sacred Heart Conv., Klerksdorp
Redhead, G. *bk.* St. Joseph's Conv. High S., St. George's, Grenada
Gibbes, M.A.B. *s.e.d.* High S., St. George's, Grenada
Poole, D. Moorhurst, Irene
Spinas, L. *g.a.* Conv. of the Holy Family, Johannesburg

THIRD CLASS.—PASS DIVISION.

[2]Bertrand, M.A. *f.* Grenada Gram. S.
Gresham, W.E. *e.f.d.* Private tuition
McDonald, A.L.E. Grenada Gram. S.
Surgeon, E.M. Westwood High S., Stewart Town, Jamaica
Mason, J.P. *a.* St. George's Wesleyan S., Grenada
Sash, S. *e.a.* Conv. of the Holy Family, Johannesburg
Shunn, E. *h.d.* Conv. of the Holy Family, Johannesburg
Johnstone, E. *a.* Conv. of the Holy Family, Johannesburg
Hollingworth, H. Moorhurst, Irene
Thornhill, C. *a.f.* Conv. of Mercy, Charlestown, Georgetown, B. Guiana
Guthrie, M.R. *e.f.* Conv. of the Sacred Heart, Potchefstroom
Kernahan, M. *a.* St. Joseph's Conv., Port of Spain, Trinidad
[2]Sutherland, H. Conv. of the Holy Family, Johannesburg
Lane, A. *d.* Sacred Heart Conv., Klerksdorp
Bowen, C. St. Joseph's Conv., Port of Spain, Triuidad
[2]Phillips, F.R. Conv. of the Holy Cross, Cala
Andrews, G. *e.d.* Moorhurst, Irene
[2]Mears, N. Conv. of the Holy Family, Johannesburg
Mussendon, E. *f.* Ursuline Conv., Georgetown, B. Guiana
Thomson, M.A. Westwood High S., Stewart Town, Jamaica
Forester, C. Private tuition
Catts, R. *e.* St. Mary's S., Oakford, Verulam
Saddington, V. Conv. of the Holy Family, Johannesburg
Collins, M. *e.* St. Mary's S., Oakford, Verulam
Reid, G. Moorhurst, Irene
Silvera, V.M. Westwood High S., Stewart Town, Jamaica
Currie, F. *e.* Conv. of the Holy Family, Johannesburg
Goliah, F.A. *a.al.* Private tuition
[2]Abraham, C. Norris Coll., Rangoon
[2]Prior, D. Parktown Conv., Johannesburg
Hunte, R. *f.* Ursuline Conv., Georgetown, B. Guiana
Morrisson, L. Conv. of the Holy Family, Johannesburg
Pieris, I.F. Private tuition
[2]Shervington, V.M. Eastcote S., Georgetown, B. Guiana
Fernandes, M. *s.h.a.* Conv. of Mercy, Charlestown, Georgetown, B. Guiana
Gibbs, C.A. Private tuition
Lloyd, C. *a.d.* Conv. of the Holy Cross, Cala
MacVicar, E.M. Hampton Court Coll., Mussooree
Hall, D. *d.* Conv. of the Holy Family, Johannesburg
Hall, A. Parktown Conv., Johannesburg
[2]Jacobs, G. St. Anne's Conv., Umzinto
McLeod, A. Parktown Conv., Johannesburg
Smith, A.D. Westwood High S., Stewart Town, Jamaica
Walker, J. *d.* Conv. of the Holy Trinity, Johannesburg
Cova, E. St. Joseph's Conv., Port of Spain, Trinidad
Lavertine, M. Parktown Conv., Johannesburg
MacVicar, K.A. Hampton Court Coll., Mussooree
Cova, M. St. Joseph's Conv., Port of Spain, Trinidad
Smith, V. Private tuition
Chung, M. Ursuline Conv., Georgetown, B. Guiana
Clarke, C.R. Westwood High S., Stewart Town, Jamaica
Rodriguez, A.I. *d.* St. Joseph's Conv., Port of Spain, Trinidad
Dunsterville, M. St. Mary's S., Oakford, Verulam
Taylor, J.G. Conv. of the Sacred Heart, Potchefstroom
[2]Schwiezer, V.A. Conv. of the Holy Cross, Cala
Yearwood, N.M. Eastcote S., Georgetown, B. Guiana
Anderson, E.W. Hampton Court Coll., Mussooree
Gough, S. St. Mary's S., Oakford, Verulam
Pantin, A.M. St. Joseph's Conv., Port of Spain, Trinidad
Goldberg, B. Conv. of the Holy Family, Johannesburg
Caplen, H.F. *d.* Conv. of the Holy Cross, Cala
Chinniah, B.R. Vincent S., Batticaloa
de' Freitas, D. Conv. of Mercy, Charlestown, Georgetown, B. Guiana
Gueydan, H. St. Joseph's Conv., Port of Spain, Trinidad
Lewis, W. *s.* Eastcote S., Georgetown, B. Guiana
[2]Lambe, C. Conv. of the Holy Family, Johannesburg
Mackintosh, E.A. *f.* St. Anne's Conv., Umzinto
McInerney, M. Conv. of the Holy Family, Johannesburg
Bell, S.U. High S., St. George's, Grenada
Somers, I. Loreto Conv., Pretoria
De Wever, L. Ursuline Conv., Georgetown, B. Guiana
Canagasabey, F.N. Vincent S., Batticaloa
Gratus, V. *d.* Conv. of the Holy Family, Johannesburg
Piercy, E. Werk-en-Rust Wesleyan S., Georgetown, B. Guiana
Salmon, V. Sacred Heart Conv., Klerksdorp
[2]Browne, N.M. Parktown Conv., Johannesburg
Rosenberg, F. Conv. of the Holy Family, Johannesburg
Robrega, A. Ursuline Conv., Georgetown, B. Guiana
Lewis, E.E. *e.* Middle S., Georgetown, B. Guiana
Tweedie, E. Sacred Heart Conv., Klerksdorp
Caplen, H. Conv. of the Holy Cross, Cala.
de' Abreu, E. Conv. of Mercy, Charlestown, Georgetown, B. Guiana

LOWER FORMS EXAMINATION.

BOYS.

Acton, M. Marist Bros.' S., Cala
Aird, J.O. Middle S., Georgetown, B. Guiana
Aitken, V. Marist Bros.' Coll., Uitenhage
Albers, G. Marist Bros.' Coll., Uitenhage
Albers, H. Marist Bros.' Coll., Uitenhage
Almon, H. Marist Bros.' High S., Port Elizabeth
Anley, S. St. Aloysius Coll., Oakford, Verulam
Appleby, R. Marist Bros.' High S., Port Elizabeth
Armstrong, J.R. Middle S., Tunapuna, Trinidad
Arnold, G.V. Marist Bros.' Coll., Uitenhage
Arthur, D.E. Middle S., Georgetown, B. Guiana
Banham, M.J. Lomas Acad., Lomas de Zamora
Barrett, R. Conv. of the Sacred Heart, Potchefstroom
Beattie, W. Marist Bros.' Coll., Uitenhage
Benjamin, S.D. Comenius Secondary S., Georgetown, B. Guiana
Berry, K. Marist Bros.' High S., Port Elizabeth
Bertorini, C.V. Lomas Acad., Lomas de Zamora
Bishop, H. Marist Bros.' High S., Port Elizabeth
Bletcher, B. Marist Bros.' S., Johannesburg
Bowker, R. Marist Bros.' High S., Port Elizabeth
Brand, Q. Marist Bros.' Coll., Uitenhage
Browne, H. Marist Bros.' High S., Port Elizabeth
Buchanan, B. Diocesan College S., Pretoria
Canagasabey, D.S. Wesleyan Central Inst., Batticaloa
Carroll, E. Marist Bros.' S., Cala
Casiechetty, G.A. City Coll., Colombo
Cattle, H.W. Marist Bros.' Coll., Uitenhage
Chatterton, E.D. Middle S., Georgetown, B. Guiana
Chitty, E. Marist Bros.' High S., Port Elizabeth
Christiani, H.L. Middle S., Georgetown, B. Guiana
Cook, C.McK. Middle S., Tunapuna, Trinidad
Coppard, F. Marist Bros.' Coll., Uitenhage
Coppard, J. Marist Bros.' Coll., Uitenhage
Corbin, A.E. Middle S., Tunapuna, Trinidad
Cozier, C.A. Middle S., Georgetown, B. Guiana
Crawford, S. Marist Bros.' High S., Port Elizabeth
Croxford, E. Marist Bros.' Coll., Uitenhage
Damp, S. Marist Bros.' Coll., Uitenhage
Downey, M. Marist Bros.' Coll., Uitenhage
Eaton, P. Marist Bros.' High S., Port Elizabeth
Ellis, V. Marist Bros.' S., Johannesburg
Evelyn, O.R. Middle S., Tunapuna, Trinidad
Favard, T. Marist Bros.' Coll., Uitenhage
Filmer, J. Marist Bros.' S., Cala
Finlay, H.E. Marist Bros.' Coll., Uitenhage
Fitzgerald, G.W. Marist Bros.' Coll., Uitenhage
Fleming, W. Marist Bros.' S., Cala
Fox, L. Marist Bros.' High S., Port Elizabeth
Franklyn, M.T. St. Joseph's Inter. S., Bourda, Georgetown, B. Guiana
Friedman, L. Marist Bros.' S., Johannesburg
Gillwald, E. Marist Bros.' Coll., Uitenhage
Gomes, R.R. St. Stanislaus S., Georgetown, B. Guiana
Gonsalves, J. St. Stanislaus S., Georgetown, B. Guiana
Goodyer, A.D. Marist Bros.' Coll., Uitenhage
Green, L. Marist Bros.' S., Johannesburg
Greenidge, H.N. Comenius Secondary S., Georgetown, B. Guiana
Griffin, H. Marist Bros.' High S., Port Elizabeth
Grigor, C. Marist Bros.' High S., Port Elizabeth
Grigor, G. Marist Bros.' High S., Port Elizabeth
Harris, C. Marist Bros.' High S., Port Elizabeth
Harrison, C. Diocesan College S., Pretoria
Hays, C.W. Marist Bros.' Coll., Uitenhage
Heath, L. Marist Bros.' S., Cala
Hermon, C. Diocesan College S., Pretoria
Higham, F.E. Marist Bros.' S., Johannesburg
Higham, J. Marist Bros.' S., Johannesburg
Hitge, W.T. Marist Bros.' S., Johannesburg
Hoare, A.L. Marist Bros.' Coll., Uitenhage
Hodgson, H. Marist Bros.' Coll., Uitenhage
Howard, H. Marist Bros.' S., Cala
Hukins, B. Marist Bros.' High S., Port Elizabeth
Hukins, L. Marist Bros.' High S., Port Elizabeth
Hundermark, F.J Marist Bros.' Coll., Uitenhage
Ingamells, H. Marist Bros.' High S., Port Elizabeth
Iyab Ally, S.H. St. Paul's Boys' English S., Colombo
Jackson, H. Marist Bros.' S., Johannesburg
Jensen, M.A. Marist Bros.' S., Johannesburg
Keating, H. Marist Bros.' Coll., Uitenhage
Kelly, F.C. Middle S., Georgetown, B. Guiana
Kernick, L. Diocesan College S., Pretoria
Keys, B. Marist Bros.' Coll., Uitenhage
Killen, A.D. Marist Bros.' Coll., Uitenhage
Kinkead, T. Marist Bros.' S., Johannesburg
Leung, H.H. St. Stanislaus S., Georgetown, B. Guiana
Lloyd, S. Marist Bros.' S., Cala
Lovemore, H.R. Marist Bros.' Coll., Uitenhage
Lowry, G. Marist Bros.' S., Cala
Mack, E. Marist Bros.' High S., Port Elizabeth
MacPherson, N. Marist Bros.' S., Johannesburg
Mallalieu, R. Marist Bros.' S., Johannesburg
Marshall, G.I. Middle S., Georgetown, B. Guiana
Martin, R.M. Marist Bros.' Coll., Uitenhage
Martin, W. Marist Bros.' Coll., Uitenhage
Meerwald, E.D. St. Paul's Boys' English S., Colombo
Miller, A.H. Marist Bros.' S., Johannesburg
Mohideen, I.M. Central Coll., Colombo
Morel, B. Marist Bros.' S., Johannesburg
Muir, C. Marist Bros.' S., Cala
Murray, S. Marist Bros.' S., Cala
O'Driscoll, H.H. Marist Bros.' S., Johannesburg
Oosthuysen, M.J. Marist Bros.' Coll., Uitenhage
Osborne, C. Marist Bros.' Coll., Uitenhage
Panton, F. Marist Bros.' High S., Port Elizabeth
Pearce, B. Marist Bros.' High S., Port Elizabeth
Pearson, A.W. Lomas Acad., Lomas de Zamora
Pearson, H. Marist Bros.' High S., Port Elizabeth
Pedris, D.W. City Coll., Colombo
Pellens, C.A. Lomas Acad., Lomas de Zamora
Perera, N.F. City Coll., Colombo
Peters, C. Marist Bros.' High S., Port Elizabeth
Pettit, H.E. Marist Bros.' Coll., Uitenhage
Phillips, H. Middle S., Georgetown, B. Guiana
Pope, R. Marist Bros.' High S., Port Elizabeth
Rawlins, A.G. Marist Bros.' Coll., Uitenhage
Rens, J. Marist Bros.' High S., Port Elizabeth
Roberts, C.P. St. Stanislaus S., Georgetown, B. Guiana
Romer, R.W. Lomas Acad., Lomas de Zamora
Ruther, C. Marist Bros.' S., Johannesburg
Samur, M. City Coll., Colombo
Sangarappillai, K. Wesleyan Central Inst., Batticaloa
Schneider, W. Diocesan College S., Pretoria
Seenivasagam, J.T. Central Coll., Colombo
Shrosbree, O. Marist Bros.' S., Cala
Shuman, S. Marist Bros.' S., Cala
Smith, G. Marist Bros.' S., Cala
Spring, H.J.A. Marist Bros.' S., Johannesburg
Subramanian, W. Central Coll., Colombo
Thompson, J. Marist Bros.' High S., Port Elizabeth
Thomson, R. Marist Bros.' High S., Port Elizabeth
Thorne, A.H. Middle S., Georgetown, B. Guiana
Thornton, J.T. Marist Bros.' S., Johannesburg
van Diggelen, H.C. Marist Bros.' S., Johannesburg
Vogel, K. Marist Bros.' High S., Port Elizabeth
Wagner, J. Marist Bros.' Coll., Uitenhage
Wakfer, A. Marist Bros.' S., Cala
Wallace, G.W. Marist Bros.' S., Johannesburg
Wambeek, J.O'B. Wesleyan Central Inst., Batticaloa
Ward, G Marist Bros.' High S., Port Elizabeth
Wasserzug, I. Marist Bros.' S., Johannesburg
Webb, V. Marist Bros.' S., Cala
Weeks, A.L. Marist Bros.' Coll., Uitenhage
Wehner, A. Marist Bros.' Coll., Uitenhage
Wellbeloved, B. Marist Bros.' High S., Port Elizabeth
Whitaker, F. Marist Bros.' High S., Port Elizabeth
White, C. Marist Bros.' S., Johannesburg
White, P. Marist Bros.' S., Johannesburg
Wilson, W. Marist Bros.' High S., Port Elizabeth
Wong, R.V.E. St. Stanislaus S., Georgetown, B. Guiana
Young, S. Marist Bros.' High S., Port Elizabeth
Zaid, A.C.M. St. Paul's Boys' English S., Colombo

GIRLS.

Allen, D. Sacred Heart Conv., Klerksdorp
Allen, R. St. Anne's Conv., Umzinto
Archer, L.A. Middle S., Georgetown, B. Guiana
Arenstein, J. Conv. of the Sacred Heart, Potchefstroom
Baker, L. Sacred Heart Conv., Klerksdorp
Bayly, M.A. St. Anne's Conv., Umzinto
Beeton, M. Holy Family Conv., Greenhill, Bloemfontein
Bingham, M. St. Mary's S., Oakford, Verulam
Bird, E. Loreto Conv., Pretoria
Blackburn, N. St. Mary's S., Oakford, Verulam
Bourke, A.B. Moorhurst, Irene
Bradbury, A. Parktown Conv., Johannesburg
Briscoe, K. Moorhurst, Irene
Brokensha, M. St. Joseph's S., Fordsburg, Johannesburg
Brown, O. Conv. of the Sacred Heart, Potchefstroom
Cadet, E. St. Joseph's Conv., Castries, St. Lucia
Catchpole, A. St. Mary's S., Oakford, Verulam
Chasen, M. Conv. of the Sacred Heart, Potchefstroom
Coghlan, A. Conv. of the Holy Cross, Cala
Cohnheim, D. Conv. of the Holy Family, Johannesburg
Collins, E. St. Mary's S., Oakford, Verulam
Covingtou, V. Conv. of the Sacred Heart, Potchefstroom
Craig, M. Ursuline Conv., Georgetown, B. Guiana
Crawford, D. St. Mary's S., Oakford, Verulam
Crowley, E. Conv. of the Holy Family, Johannesburg
Cuñha, A.C. Middle S., Georgetown, B. Guiana
Da Costa, C.C. Middle S., Tunapuna, Trinidad
De Gale, D.A.H. Mt. Edgecumbe, St. Mark's, Grenada
De Leon, O. Ursuline Conv., Georgetown, B. Guiana
De Weever, I. St. Joseph's Inter. S., Bourda, Georgetown, B. Guiana
Dornford, S. Conv. of Mercy, Charlestown, Georgetown, B. Guiana
Driffield, R. Conv. of Mercy, Charlestown, Georgetown, B. Guiana
du Boulay, J.C. St. Joseph's Conv., Castries, St. Lucia
Eberhardt, C. Conv. of the Sacred Heart, Potchefstroom
Edwardes, F. Holy Family Conv., Greenhill, Bloemfontein
Elliott, R. Holy Family Conv., Greenhill, Bloemfontein
Emms, E. Conv. of the Holy Cross, Cala
Erasmus, M. Moorhurst, Irene
Farnum, L.M. Conv. of Mercy, Charlestown, Georgetown, B. Guiana
Faucet, M. Conv. of Mercy, Charlestown, Georgetown, B. Guiana
Fowler, I. Werk-en-Rust Wesleyan S., Georgetown, B. Gniana
Fraser, A. Werk-en-Rust Wesleyan S., Georgetown, B. Guiana
Friedman, J. Conv. of the Holy Family, Johannesburg
Gielink, M. St. Mary's S., Oakford, Verulam
Gomez, M. St. Joseph's Conv., Port of Spain, Trinidad
Grantham, H. St. Joseph's Conv., Port of Spain, Trinidad
Gratus, S. Conv. of the Holy Family, Johannesburg
Gray, Z. Conv. of the Holy Cross, Cala
Hall, E. Conv. of the Holy Cross, Cala
Harington, K. Loreto Conv., Pretoria
Harris, A. Conv. of the Holy Cross, Cala
Harris, E. Conv. of the Holy Family, Johannesburg
Harris, I. Conv. of the Holy Cross, Cala
Hart, M. Conv. of the Holy Family, Johannesburg
Hill, H.E. Comenius Secondary S., Georgetown, B. Guiana
Hogan, L. St. Mary's S., Oakford, Verulam
Hogg, P. Conv. of the Holy Cross, Cala
Humphreys, K.E. St. Anne's Conv., Umzinto

GIRLS, LOWER FORMS—*Continued.*

Johnston, G. Conv. of the Holy Family, Johannesburg
Jones, F. Conv. of the Sacred Heart, Potchefstroom
Jorge, M. Ursuline Conv., Georgetown, B. Guiana
Kean, A. St. Mary's S., Oakford, Verulam
Kernahan, M. St. Joseph's Conv., Port of Spain, Trinidad
Kroekel, D. Parktown Conv., Johannesburg
Laffitte, G.M.E. St. Joseph's Conv., Castries, St. Lucia
Landsburg, M. Loreto Conv., Pretoria
Lilyveld, G. Sacred Heart Conv., Klerksdorp
Lurie, E. Loreto Conv., Pretoria
Mackintosh, E.M. St. Anne's Conv., Umzinto
Marquis, F. St. Joseph's Conv., Castries, St. Lucia
Masters, E.E. Hampton Court Coll., Mussooree
McConnell, L. Conv. of the Holy Family, Johannesburg
McInerney, A. Conv. of the Holy Family, Johannesburg
Meyers, K. Loreto Conv., Pretoria
Miller, D.M. Moorhurst, Irene
Milne, M. Holy Family Conv., Greenhill, Bloemfontein
Monk, K. Conv. of the Sacred Heart, Potchefstroom
Monplaisir, E. St. Joseph's Conv., Castries, St. Lucia
Morrish, G. Conv. of the Holy Family, Johannesburg
Murray, J. Conv. of the Holy Cross, Cala
Nelson, A. Conv. of the Holy Cross, Cala
Neumann, E. Conv. of the Sacred Heart, Potchefstroom
Newton, M. Sacred Heart Conv., Klerksdorp
Nurse, V. Ursuline Conv., Georgetown, B. Guiana
Paiva, M. Ursuline Conv., Georgetown, B. Guiana
Payn, D. Conv. of the Holy Cross, Cala
Payne, M.H. St. Joseph's Inter. S., Bourda, Georgetown, B. Guiana
Pegler, E. Conv. of the Sacred Heart, Potchefstroom
Philipps, D. Parktown Conv., Johannesburg
Pickett, L.A. Middle S., Georgetown, B. Guiana
Prada, E. St. Joseph's Conv., Port of Spain, Trinidad
Price, I. St. Mary's S., Oakford, Verulam
Pringle, E.M. Eversley, Georgetown, B. Guiana
Ralph, E. St. Joseph's S., Fordsburg, Johannesburg
Rautenbach, R. Loreto Conv. S., Lydenburg
Richards, E.H. Middle S., Georgetown, B. Guiana
Rousseau, K. Conv. of the Sacred Heart, Potchefstroom
Rubinstein, B. Loreto Conv., Pretoria
Sack, H. Conv. of the Sacred Heart, Potchefstroom
Schapiro, A. Parktown Conv., Johannesburg
Scully, K.M. Hampton Court Coll., Mussooree
Scully, M.D. Hampton Court Coll., Mussooree
Seale, E. St. Mary's S., Oakford, Verulam
Sellier, J. St. Joseph's Conv., Port of Spain, Trinidad
Smith, M. Conv. of the Holy Cross, Cala
Stienman, O. Conv. of the Holy Family, Johannesburg
Sutherland, M. Conv. of the Holy Family, Johannesburg
Vander Byl, D. Moorhurst, Irene
Watson, M. St. Mary's S., Oakford, Verulam
Wells, N.L. High S., St. George's, Grenada
Wetherill, A. Loreto Conv. S., Lydenburg
Woods, H. St. Mary's S., Oakford, Verulam
Yerbury, M.J. Hampton Court Coll., Mussooree

COLLEGE OF PRECEPTORS.

DIPLOMA EXAMINATIONS—CHRISTMAS, 1906.

REMARKS BY THE EXAMINERS IN PSYCHOLOGY AND PRACTICE OF EDUCATION.

Psychology.

The work done by many of the candidates seems to me very unsatisfactory. These candidates show no capacity to learn anything from their reading in psychology that would be of value in their work in teaching. They seem to rely upon vague and trite generalities, and seldom pay any special consideration to the precise question to be discussed. Frequently technical terms are introduced without any sense of the importance of precision in their use. But a still more disastrous fault is the failure to distinguish between the mental process carried out by the teacher and that carried out by the child. This fault is conspicuously shown in the use of such words as "Compare" and "Associate." Thus, when it is stated that instruction makes use of "comparisons" or "associations," the candidates fail to indicate what the pupil is supposed to do in the way of comparison or association as distinct from what the teacher does. More generally, it may be said that the candidates are unable to analyse the mental processes of the child, and rely upon the employment of a faculty-name in place of analytic description. Another favourite habit is to make a great parade of knowledge by drawing up a list of all the more preliminary processes upon which a more developed process depends, instead of dealing with this developed process itself. Thus the following is very typical of scores of answers which the examiner has to mark in reference to such a question (say) as "Analyse the process of active recall."—"The process of recall involves the exercise of the faculty known by Psychologists as Reproductive Imagination. Reproductive Imagination is impossible without previous clear and distinct perceptions and observations. Hence the importance of making the child observe accurately. The chief way in which the child can be made to do this is to secure his Interest. And Psychology teaches us that the child is always interested in anything that appeals to his senses. Thus we must always remember that the senses must first of all be carefully trained, and that the teacher must use the Concrete before the Abstract," &c.

Another common fault is to imply that the one thing that the teacher has to do in order to exercise any process in the child's mind is to supply him with such aids as will virtually prevent him from exercising any activity in the matter at all. Thus, to exercise the process of Constructive Imagination, the teacher is told to present the child with accurate pictures or models; to exercise him in recall, the teacher is told to put to the child leading questions which shall supply the missing suggestive clue; and, in a similar way, to strengthen his moral powers of will, it is suggested that he should be taken out of the way of all provocative circumstances.

The little knowledge that the candidates have of the physiology of the brain seems to be more mischievous than complete ignorance. Thus, in explaining the effects of habit as depending upon the deepening of nerve tracks due to repetition of nerve currents, they appear to believe (say) that one part of the brain officiates in the process of "association," and another part in that of "discrimination"; that one cerebral area is used in speaking the truth and another in telling falsehoods. In short, the most serious error into which they continually fall is the misapplication of the doctrine that "Exercise strengthens Faculty." This doctrine is interpreted to mean that exercise in *discriminating* colours (say) strengthens the power of discriminating sounds; that exercise in *reproducing* colours strengthens the power of reproducing sounds; that exercise in *associating* colours strengthens the power of associating sounds; and so on through the whole list of Faculties. Though they frequently refer to the Herbartian doctrine of Apperception, they have failed utterly to understand that this doctrine has long ago replaced the ancient Faculty-fallacy, which they invariably bring forward.

W. E. JOHNSON.

Practice of Teaching.

The most serious blemish in the unsuccessful Associateship papers is the failure of the writers to show that actual school practice had been made by them a subject of thoughtful consideration. Instead of giving evidence of reflection upon their own daily experience in the class-room, these candidates were much too ready to ride off upon some psychological jargon, or sheer cant about "the tactful teacher," "the true teacher," and the like. An examiner in the *practice* of teaching would like to see more of the candidates themselves and less of their text-books or tutors. "Tall talk" and verbiage were also made to do duty for knowledge in too many of the papers unsuccessfully sent up for the Licentiateship.

Some candidates failed in part owing to inexperience of what is customary in schools other than elementary; on this account many answers were wide of the mark in the replies made to Questions 2, 4, 5 of the Associateship paper, and to Questions 2 and 4 of the Licentiateship paper.

Nor was ignorance wanting of a sort hard to excuse in any teacher. Failure to appreciate the *crux* in teaching "division of fractions," failure to realize the essential part played in our arithmetic by the decimal notation, failure to attach any meaning to "discipline" beyond that current in the barrack square, failure to employ the word "emulation" in its commonly understood sense—all appeared again and again in the papers of the Associateship candidates. Indeed, too many of the papers written for both the Licentiateship and the Associateship were disfigured by illiteracy in diction, in style, and even in spelling and punctuation.

I add a few notes on the answers to particular questions.

Associateship Paper.—Question 1: The problem was commonly shirked. Not a few declined to admit that a capable teacher ever puts intrinsically unattractive subject-matter before pupils; others overlooked the word "intrinsic," and suggested such expedients as "opening the windows," "telling a story." Questions 2, 3, 4: see report above. Question 4: Many thought that teaching boys prefixes and suffixes of Latin origin in English words was teaching Latin. Question 5: Of the options offered, English literature was treated least satisfactorily. Too many substituted "language" for "literature," and wrote about composition, parsing, and the like. Question 8: The connexion between understanding "place value" and an intelligent apprehension of arithmetic generally was not appreciated by many, who seemed to think that the former owed its importance only to decimal fractions and the metric system. Question 9: Though the faults I refer to here are not at all vital, it may be of use to some to point out that the Herbartian "Five Formal Steps" are not necessarily "Steps" of a lesson, and that many lessons must be given in all schools to which the "Formal Steps" are scarcely applicable or not applicable at all. Again, the division of the "notes" into two columns headed "Matter" and "Method" respectively is both artificial and illogical; the order in which the "matter" of a lesson is arranged is one of the most important considerations in the "method" of that lesson, and not a different business. But, I repeat, these are not vital errors, and no "failures" are attributable to them.

Licentiateship Paper.—Question 2: see report above. Too many answers set forth purely *a priori* objections from persons without experience in the use of phonetics or of "set books." It is undesirable that questions on the *practice* of teaching should be answered by the unaided "light of Nature." Candidates had twelve questions of a very wide scope from which to answer five only. Question 3: The word "classical" was overlooked by many, whose lists of books would serve equally well for *any* form of pupils of about fifteen years of age. Question 9: Here again the limiting word "language" was ignored by some, who replaced it by "literature." The mistake of not reading questions carefully is one of frequent occurrence in all examinations, but is inexcusable, nevertheless.

J. W. ADAMSON.

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CURRENT EVENTS.

Fixtures.

A *Conversazione* will be held at the College of Preceptors on Wednesday, March 6, at 8 p.m.

* * *

M. CH. ADER will address the Société Nationale des Professeurs de Français en Angleterre at the College of Preceptors on March 25 at 4 p.m. Subject: "De l'Enseignement du Français—Lois Phonétiques, Lois Musicales, Rapports et Divergences."

* * *

DR. T. G. PINCHES will give two lectures on "The Religion of the Babylonians and the Assyrians" at University College, London, on March 14 and 21 at 4.30 p.m. Open, without fee or ticket.

* * *

AT Bedford College for Women (University of London) Mr. James Cantlie, M.A., M.B., F.R.C.S., will lecture on "Physical Efficiency," March 4, at 5.30 p.m.; and Mrs. Hume Pinsent, Chairman of the Special Schools Sub-Committee, Birmingham, on "The Problem of the Mentally Defective," March 18, at 5.30 p.m. Open, without fee.

MR. GEORGE THOMSON, art master, will exhibit water-colour drawings in the studio of the College, March 9, 10—6. Cards from the Principal.

* * *

THE following lectures and discussions have been arranged by the Childhood Society and the British Child-Study Association, to be delivered in the Parkes Museum, Margaret Street, W.:—March 7, "Games and Athletics in America," by T. G. Tibbey, B.A.; March 14, "Physical Training in relation to Fatigue," by R. J. E. Hanson, M.A., M.B., B.L., R.N.V.R., Hon. Executive Officer to Lord Roberts's Mansion House Committee on National Training; March 24, Discussion on Results of a Joint Study on Children's Ideals of a Day's Outing. At 8 p.m. each evening.

* * *

A CONFERENCE on the Teaching of History in Schools will be held, under the auspices of the Federated Associations of London Non-Primary Teachers, at the Polytechnic, 309 Regent Street, W., on March 9, at 3.30 p.m.

* * *

A CONFERENCE on the Teaching of Thrift, convened by the Charity Organization Society, will be held at the Council Chamber, Denison House, 296 Vauxhall Bridge Road, S.W., on March 9, at 3 p.m. Teachers or managers of schools may obtain tickets of admission on application to the above address.

* * *

SPECIMEN Moral Lessons will be given at 28 Buckingham Street, Strand, W.C. (Moral Instruction League), by A. J. Waldegrave (on "Fair Play"), March 11; and by F. W. Rowe, March 25—at 7 p.m. prompt.

* * *

THE Royal Drawing Society's Exhibition will be held in the Skinners' Company's Hall from March 22. H.R.H. the

Duchess of Argyll has promised, if possible, to open the Exhibition.

* * *

An International Exhibition of Professional Papers and Periodicals, as well as of graphical trades and the art of advertising, will be held, under the auspices of the Association of Danish Professional Papers and Periodicals, at Copenhagen during May and June. Address—Redaktør Søren Ringer, Formand, Colbjørnensgade 14, Kjøbenhavn B.

Honours.

The Order of Merit has been conferred upon Mr. Bryce, British Ambassador to the United States.

* * *

The University of Oxford has conferred the hon. degree of D.D. upon the Rev. William M. Cameron, Corpus Christi College, Coadjutor Bishop-elect of Cape Town; and the hon. degree of M.A. upon Mr. Adolphus Ballard, B.A., LL.B. Lond., Clerk to the Oxford Board of Guardians, for his Domesday Book researches.

* * *

The University of Edinburgh has decided to confer the following honorary degrees:—

D.D.: Prof. F. C. Burkitt, M.A., Cambridge; Prof. D. M. Kay, St. Andrews; the Rev. John Kelman, M.A., New North United Free Church, Edinburgh; and the Rev. John Young, M.A., Home Mission Secretary, United Free Church, Edinburgh.

LL.D.: Viscount Milner, G.C.M.G., G.C.B.; Prof. John Burnett, M.A., St. Andrews; Mme. Curie, D.Sc., Paris; Lord Justice Farwell; Prof. D. J. Hamilton, F.R.C.S., F.R.S.E., Aberden; Thomas M'Kie, advocate, Edinburgh; M. Emile Senart, Paris; and Sir John Tweedy, London.

* * *

The Senatus of Aberdeen University has resolved to confer the following honorary degrees:—

D.D. upon the Rev. James Duthie, Principal of the London Missionary Society's College, Nagercoil, Southern India; the Rev. James Forrest, M.A., Minister of Lonmay; the Very Rev. James Cameron Lees, D.D., Minister of St. Giles, Edinburgh; the Rev. John Milne, M.A., Minister of Newlands, Peebleshire; Arthur Samuel Peake, M.A., B.D., Professor of Biblical Exegesis, Victoria University, Manchester; the Rev. Robert Scott, Professor of English Literature, Wilson College, Bombay; the Rev. John Smith, M.A., Minister of St. John's Presbyterian Church, Pietermaritzburg.

LL.D. upon his Excellency Sir John Anderson, K.C.M.G., M.A., Governor of the Straits Settlements; James Campbell Brown, D.Sc., Professor of Chemistry in the University of Liverpool; William Speirs Bruce, naturalist and oceanographer, Edinburgh; Thomas Smith Clouston, M.D., Physician-Superintendent, Royal Asylum, Edinburgh; James Edward Crombie, M.A., Aberdeen; Dr. Anton Dohrn, Zoological Station Director, Naples; his Excellency, Hamdy Bey, Director of the Imperial Museum, Constantinople; Robert Walker, M.A., formerly Secretary to the Aberdeen University Court, sometime Fellow of Clare College, Cambridge.

* * *

The Senatus Academicus of St. Andrews University has resolved to confer the following honorary degrees (April 2):—

D.D. upon Rev. James Ballingall, B.D., Minister of Rhynd, Perthshire; Rev. James Gilroy, D.D., Professor of Hebrew, University of Aberdeen; Rev. David H. Lawrence, M.A., Minister of Queen Street United Free Church, Broughty-Ferry; Rev. Robert Scott, M.A., Minister of Craig, Montrose.

LL.D. upon Rev. H. M. Butler, D.D., Master of Trinity College, Cambridge; W. A. Craigie, Taylorian Lecturer in Scandinavian Languages, University of Oxford, and joint Editor of the "New English Dictionary"; Rev. T. M. Lindsay, D.D., Principal of the United Free Church College, Glasgow; Prof. Herbert M'Leod, formerly Professor of Chemistry, Royal Indian Engineering College, Coopers Hill; James Robertson, D.D., Professor of Hebrew and Semitic Languages, University, Glasgow.

* * *

The honorary Fellowship of the College of Preceptors has been conferred upon the Rev. Canon Bell and Mr. F. Storr.

The portrait of Mr. Robert Atkinson, LL.D., Senior Fellow of Trinity College, Dublin, Professor of Romance Languages (since 1867) and of Sanskrit (since 1871) in Dublin University and late President of the Royal Irish Academy, has been presented to the latter institution, in whose service he has laboured for many years.

Endowments and Benefactions.

Lord Newlands has founded two "Jowett Fellowships," £500 a year each, as additional emoluments to two Tutorial Fellows of Balliol College, Oxford. Mr. Strachan Davidson and Mr. A. L. Smith, Tutors in Ancient and in Modern History respectively, have been nominated by him as the first holders.

The Hon. T. A. Brassey has established at Balliol College a Studentship in Historical Research. He has also collected from old Balliol men a large endowment fund for the College.

* * *

Mr. Francis Galton, F.R.S., has given a further sum of £1,000 to enable the University of London to revise and extend the scheme for the study of national eugenics founded under his previous benefaction, and to provide for the carrying on of the work of the Eugenics Laboratory for the next three years.

* * *

The late Mr. C. J. Oldham, Brighton, has left to the Universities of Oxford and Cambridge £5,000 each, the income to be applied to founding one annual prize or scholarship in the ancient classics, and one in knowledge of Shakespeare's works, at each University.

* * *

Messrs. Henry Wiggin & Co. have given £2,000 to found a scholarship in science in Birmingham University.

Messrs. William Cooke & Co., Sheffield, have offered a scholarship for mining students, £21 a year.

* * *

A grant of £1,000 has been made by the Mercers' Company to the Imperial Institute for scientific research in regard to the economic products of British colonies and protectorates.

* * *

Mr. Bertram F. Robinson, late editor of the *World*, has left £2,000 to found a memorial scholarship at Newton College, Newton Abbot.

* * *

The late Right Hon. Samuel Smith, formerly M.P. for Flintshire, has left £1,000 to the University College, Bangor.

* * *

Dr. H. J. Spenser, Head Master of University College (London) School, is appealing to Old Boys and others interested in the welfare of the institution for £40,000—the balance necessary to enable the school to start free of debt at Hampstead.

* * *

Miss Cruickshank has presented to the University of Aberdeen a handsome window in the Library at Marischal College, in memory of her father, the late Dr. John Cruickshank, Professor of Mathematics 1817–60, and Librarian 1844–60; and two portraits in oils—one of Sir Archibald Simpson, the architect of Marischal College; the other of James Ferguson, the astronomer, who was born in the same parish (Rothiemay) and "on the opposite side of the selfsame hill" as Prof. Cruickshank.

The executors of the late Dr. David Macritchie (Huntingdonshire) have presented a beautiful mace to the Students' Representative Council.

Mrs. Fawcett has presented to the University of Bombay a marble bust of her late husband, the Right Hon. Henry Fawcett, M.P., by Mr. Hope Pinker.

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Sir Cowasjee Jehanghir Readymoney has offered to the Government of Bombay two and a half lakhs (£16,666) for the erection of a University Examination Hall in Bombay, on condition that, when not required by the University, the Hall shall be available to the public for non-political purposes. Sir Cowasjee's father gave to the city of Bombay the Elphinstone College buildings and the Senate Hall of the University.

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Mr. John D. Rockefeller has given £6,400,000 to the General Education Board. One-third of the sum is to be applied to the establishment of colleges in various parts of the United States and the remainder is to be held in reserve for developments.

Appointments and Vacancies.

Earl Spencer has resigned the office of Chancellor of the University of Manchester, in consequence of repeated illnesses.

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The Chancellorship of the University of Oxford, vacant by the death of Lord Goschen, will be filled on March 14.

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Mr. Donald MacAlister, M.A., M.D., F.R.C.P., &c., has been appointed Principal of the University of Glasgow, in succession to the late Rev. Dr. Story.

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The Rev. Richard Appleton, M.A., Fellow of Trinity College, Cambridge, Honorary Canon of Durham, and Vicar of Ware, has been appointed Master of Selwyn College, Cambridge, in succession to Dr. Kirkpatrick, now Dean of Ely.

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Mr. Neil J. D. Kennedy, K.C., LL.D., Professor of Law in the University of Aberdeen, has been appointed Sheriff-Principal of Renfrew and Bute.

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The Presidentship of Trinity College and the Camden Professorship of Ancient History, Oxford, are vacant through the death of Mr. H. F. Pelham, M.A., LL.D., F.B.A., &c.

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It is understood (says the *Times*) that at the end of the present quarter Dr. James, Provost of King's College, will resign the directorship of the Fitzwilliam Museum and the Museum of Classical Archæology, Cambridge.

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The Right Hon. Sir Alfred C. Lyall, K.C.B., G.C.I.E., Hon. D.C.L. Oxon., Hon. LL.D. Cantab., has been appointed Ford Lecturer at Oxford for the ensuing academical year.

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Sir Aston Webb, R.A., has been appointed Reader on Sir Robert Rede's Foundation at Cambridge University for the present year. He will deliver the Rede Lecture on June 8.

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Mme. Sarah Bernhardt has been appointed Professor of Elocution at the Conservatoire, Paris.

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Mr. Courtney Stanhope Kenny, M.A., LL.D. of Downing College, University Reader in English Law, has been appointed Professor of English Law in the University of Cambridge, in succession to the late Prof. Maitland. Prof. Kenny is best known by his works on criminal law. He was M.P. (Liberal) for the Barnsley Division of Yorkshire, 1885–6.

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Mr. Richard Temple has been appointed Director of the Dramatic Class and Professor of Elocution and Diction at the Royal Academy of Music.

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Mr. George Goodes has been appointed Professor of Elocution at the Academy of Dramatic Art.

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Mr. P. T. Maw, F.S.I., has been appointed, temporarily, Professor of Estate Management and Forestry in the Royal Agricultural College.

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Mr. Thomas Loveday, M.A., formerly Senior Demy of Magdalen College, Oxford, Professor of Philosophy at the South African College, Cape Town, has been appointed Librarian to the University of Sheffield.

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At Manchester University, Mr. R. F. Gwyther, M.A., has resigned the Fielden Lectureship in Mathematics, on his election as Permanent Secretary of the Joint Matriculation Board; and Mr. W. H. Jackson, M.A. Cantab., his Assistant Lectureship in Mathematics, on appointment as Associate Professor of Mathematics at Haverford College, Pennsylvania.

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Mr. David Heron, M.A., has been appointed Galton Research Fellow in National Eugenics in the University of London, in succession to Mr. Edgar Schuster, M.A., resigned. Miss E. M. Elderton has been appointed Galton Research Scholar; and Miss Amy Barrington (Mathematical Tripos, Cambridge) Computer.

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Mr. Arthur B. Keith, M.A. Edin., B.C.L. Oxon., of the Colonial Office, has been appointed Lecturer in Ancient History in Edinburgh University.

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Mr. G. P. Darnell-Smith, B.Sc., F.I.C., F.C.S., Assistant Professor of Chemistry at the Merchant Venturers' Technical College, Bristol, has received an appointment in the Education Department, Auckland, New Zealand.

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Miss Helen C. Higgins, B.A., Head Mathematical Lecturer, Cheltenham Ladies' College, has been appointed Principal of the Royal Holloway College, in succession to Miss Penrose.

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Mr. Percy W. Shelford, B.A. Lond., Municipal Secondary School, Manchester, has been appointed Head Master of the Duke's School, Alnwick, where he was formerly second master.

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The Rev. E. G. Muschamp, B.A. Oxon., has been appointed Head Master of the Hutchins School, Hobart, Tasmania.

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Under the new *régime* at Elmfield College, Mr. S. R. Slack, B.A., Archbishop Holgate School, has been appointed Head Master, in succession to Mr. R. G. Heys, B.A., who is opening a private school at Scarborough; Mr. J. M. W. Mason, B.A., B.Sc., senior assistant master; and Mr. W. A. Magill, R.U.I., formerly of Lurgan College, and Mr. O. Jackson, late of Oundle Grammar School, assistant masters.

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The Ven. H. B. Sidwell, M.A. Cape, Archdeacon of

Pretoria, has been appointed Head Master of the Diocesan Boys' School, Pretoria.

Scholarships and Prizes.

The Anglo-French Association offers two travelling scholarships of £10 each on the lines of the circular of the Board of Education. Competition November 2, at the City of London School for Boys (Embankment), open to British subjects of both sexes born on or after January 1, 1888.

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Bedford College for Women (University of London) offers three entrance scholarships: one in Arts, £31. 10s. first year, £28. 7s. second and third years; two in Science, £48 each for three years. Examination, June 26–29. Entry forms and full particulars from the Principal.

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The London College of Music offers five open scholarships —for singing, pianoforte, organ, violoncello, clarinet—giving free tuition, suitable for a professional student, for two years. Competition March 22. Entries to reach Mr. T. Weekes Holmes, the Secretary, by March 15.

Literary Items.

The next volume of the "Oxford Library of Prose and Poetry" will be "Selections from Dr. Johnson's 'Rambler,'" edited by Mr. W. Hale White, the object being not so much to give specimens of felicitous expression as to show what Johnson thought and revealed in his conversation, and that he is but partially understood by those who know him through Boswell alone, the "Life," indeed, having obscured the merits of Johnson's own works. Another volume of Jowett's Essays—dissertations turning principally on his method of interpreting Scripture—with an introduction by Prof. Lewis Campbell, is also about to be issued in the same series.

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Messrs. Jack have in active preparation a "Social Problems Series," treating current questions of social interest on broad principles in the light of present-day needs. The first volume—"The Children," by Prof. Darroch—creates a very favourable impression.

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Dr. C. M. Grant, Dundee, has written for Messrs. A. & C. Black's popular series of "Guild Text-Books" a volume on the history and literature of the period "Between the Testaments" (Old and New). It will be published presently.

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Messrs. George Philip & Son will shortly publish a new and enlarged edition of "In Nature's Storyland," by Miss Edith Irons, with illustrations by Miss E. K. Reader and an introduction by the Hon. M. Cordelia Leigh. Also a new "Physical Geography for Intermediate and Secondary Schools," by E. Owen Williams, County School, Aberdare.

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The *Cornhill Magazine* for March includes "Military Memoirs of Sir Archibald Alison," which recall his distinguished services in the Mutiny and in Ashanti. Mr. W. A. Shenstone writes on "Electric Waves and Wireless Telegraphy," explaining the system which is the rival of Marconi's; and Judge Willis deals with the history of "The Courts at Westminster." Mr. A. G. Bradley writes on "Marlborough and Savernake"; and "The Land of Might-have-been," by Mr. Leonard Huxley, is a chapter of imaginative biography.

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Macmillan's Magazine for March contains an article on "Colonial Virginia," by Mr. A. G. Bradley; and one on "On the Land in New Zealand"—a record of some social experiments. Mr. W. Johnston writes of the House of Commons and its reform in "A Businesslike Parliament"; and Mr. W. B. Thomas, in "Our Young Citizens," deals with "a small revolution" recently begun in many public schools.

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Modern Language Teaching for February (A. & C. Black) reproduces in full Dean Kitchin's address of welcome to the Modern Language Association at Durham, and also Mr. Benson's presidential address.

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Mr. F. J. Vaes (Mathenesserlaan 290, Rotterdam) announces a proposal to start "a mathematical review written in Esperanto and destined for mathematicians all over the world"—*Gazeto Matematika Internacia.*

General.

The Council of the University of Manchester have decided to institute two new lectureships —one in Economic Zoology and one in Economic Botany.

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Prof. Sadler, of the Victoria University, Manchester, is to be invited to visit Canada as the guest of Prof. Goldwin Smith, for the purpose of giving him an opportunity of making himself acquainted with the affairs of Toronto University, with a view to his ultimately accepting the Presidency.

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It is intended to hold an Exhibition of British and French Industries in London next year. The guarantee fund is already £220,000.

POETRY AS AN ATMOSPHERE, A DISCIPLINE, AND A STUDY.

At the Evening Meeting of the College of Preceptors on February 20, Mr. H. W. Eve in the Chair, a lecture was given by Mr. P. A. Barnett, M.A., of which the following is an abstract:—

It is an indisputable and patent fact that people are interested in literature, whether the stuff which they enjoy is good or bad. The universal interest in literature, in its narrow sense of *belles lettres*, shows that it really is coextensive with life. It is unfortunate that after a generation of school solicitude there should still be such a demand for mean and vapid and pretentious matter. The school, however, has not been entirely unsuccessful, and there are many hopeful signs of a growing taste for better things. But the schools have not done enough, and teachers have often set about their business in the wrong way.

We are led into many difficulties owing to our habit of dividing up our system of knowledge into provinces or subjects, and assigning special "studies" to special areas. The truth is that several "subjects" which figure on a time table are often only different ways of looking at the same facts of experience. Literature covers the largest field; and poetry is a way of looking at things more generally applicable, more "universal," than other ways, and of expressing the associated emotions in a marked rhythm.

We are born with a readiness to respond to certain stimuli, and in particular we notice a sensibility to light and sound. A tiny child delights in recurrent sounds, and this is the basis of the liking for *metre*, which lies at the very core of the liking for poetry in early stages of development. Shock or pain expresses itself from the first in *dis*orderly movements and sounds—particularly sounds. Delight, and the passion of intelligent beings, are expressed mostly in movements and sounds of decided rhythm.

The most fortunate children are surrounded by happy sounds —modulated, regular, pleasing. They learn nursery rhymes long before the words have any meaning, or in despite of their lack of

rational meaning. As far as possible, the effects must be joyous. "A babe is fed with milk and praise." In the meanest circumstances the young child tries to find an ordered delight by way of "play."

Poetry is "a way of seeing things." It is a truer way than any other, because it is more compendious and because it represents the most extensive human aspect of things. Its very compendiousness makes it essentially unanalysable. The highest forms of poetry fix the whole experience of a nation, or even race. Youth is the best period for making the mind accessible to poetry, because it is sincere, less conventional than age. Unless we acquire early the habit of dealing with facts imaginatively, and acquire also the liking for the habit, facts have a meaning for us limited strictly and solely by the passing needs of the moment; they are small, and without spiritual significance. We must use the child's natural truthfulness to make him early in life look on things "on a big scale," imaginatively.

From the earliest cultivation of the love of mere sound we pass to poetry with more "content"—action, first of all bizarre and irrational, and conduct unmoral—until the child looks for reasons, and requires something in character to praise or blame. This constitutes the passage to epic and heroic poetry, and to the ethical and "cautionary" story. The next stage is wider, and comprises the cultivation of a taste for the true lyric and for the simpler forms of drama.

All along we should give the children occasional opportunity of reproducing rhythmic effects which they have met and liked, and as early as ten or eleven the mere elements of metre and scansion should certainly be taught. This is the more important because it soon becomes necessary to infect your pupils with the feeling that there is something in poetry—a marriage of form and matter—which no analysis can explain or reproduce. They must love it without being able to account, in mechanical terms, for their delight. It is just this that makes the free use of poetry so important at a time when investigation and proof are supposed to play such an important part in discipline. Short of hard philosophical and subtle dramatic poetry, children may well be got to like and to learn matter which they can only completely understand in very mature years. The thing read or learnt should be composed on a simple metrical scheme, and should be a *whole*, and not a snippet.

We may begin quite early with Shakespeare, if we read a whole play, and do not explain too much. And we ought not to waste this precious, and indeed sacred, time of youth by setting children to learn and represent ephemeral "musical comedies," and such like. They should have the best, something to last—"A Midsummer Night's Dream," not "Les Cloches de Corneville."

The examination of poetic diction, of the meaning of "imagination," of "key," and so forth, are legitimate and most profitable parts of the study of poetry, it being always remembered that the chief purpose of poetry is *delight*. The history of poetry and of the poets is of no consequence whatever unless, and in so far as, it enables an advanced pupil to understand and enjoy his text. Until the last stage of school life these things are generally out of place.

Dr. Hayward said that the lecture was full of suggestions which would be of service to teachers. One of the chief difficulties in teaching literature to very young children was the lack of suitable poems, and this defect was particularly noticeable with regard to poetry of a patriotic character. He agreed with the lecturer as to the importance of rhythm, and he regretted the tendency on the part of teachers to discourage their pupils' attempts at rhythm when reciting poetry. Possibly this unwise teaching was responsible for the difficulty many people had in recognizing metre in a piece of poetry written in prose form. He thought that time would be better spent in scansion than in teaching certain useless grammatical rules. He could not agree with the lecturer's condemnation of the use of selections, but thought that, in view of the limited amount of time available for literature teaching, a book of selections was inevitable as supplementary to a book of fairly complete poems.

Dr. Scott said he had seldom listened to a lecture with which he was so completely in accord from beginning to end, and he only desired to emphasize one or two points. The function of the teacher was to act as an interpreter of the poet, and to enable the child to understand and enjoy new and fresh presentations of old ideas. Unless the teacher himself had a love of literature, it would be impossible for him to assist in cultivating the judgment and selective power of the child. He was entirely in agreement with the lecturer as to the desirability of reading a poem as a whole, and not introducing fragments into school work. It was a good plan to go rapidly through the portion of work to be taken up and to select certain parts for minute study.

Mr. Nunn thought that, just as in the study of science laboratory work formed an important part of the subject, so in studying poetry more attention should be devoted to practical work. There were, of course, obvious difficulties in the way of adopting any systematic plan, and it was not to be expected that every pupil would be able to produce a poem; but only by practice in versification could sufficient attention be secured to scansion; and he thought that the attempt to produce original work would help the pupils to appreciate the point of view of the poet.

Mr. King thought that in teaching literature to young children much use might be made of their love of action. The old ballad poems, such as those relating to Robin Hood, were always great favourites with children of eight to ten years of age. There was quite a large collection of these poems, and there were some excellent modern reproductions. He had made considerable use of these, and found they were generally intelligently understood. He had also used Gay's "Fables" at various times. The shorter fables were always greatly enjoyed, although the moral was not always thoroughly understood, Again, quite a large percentage of the pupils possessed a vein of humour, and a few in each class would thoroughly appreciate the genuine fun in Hood's poems and "The Ingoldsby Legends." Original work was extremely valuable, as, however badly it might be produced, it served to bring out in the class the power of criticism.

Mr. Dumville agreed with the lecturer that in the teaching of literature it was necessary to give young pupils a great deal to do which they could not understand. His own experience showed him that tasks which appeared disagreeable and useless at the time of their performance might be of benefit at a later period. Of course, it was necessary for the pupils to understand something of what they read, and it was difficult to know how much the teacher should attempt to explain and the best means to adopt. It was sometimes a good plan, before commencing the study of a piece of poetry, to familiarize the pupils with the ideas presented by embodying them in a tale expressed in simple language. Being interested in the tale, the pupils would better appreciate the poet's expression when they came to study the poem itself. Another means of securing the interest of the pupils was to present the poem in the form of a riddle, leaving out the title. He did not agree with Dr. Hayward that there was any lack of good poetry for young children, but thought that much that was suitable was apt to be neglected because teachers were unaware of the interest it possessed for young pupils.

The Chairman thought the lecture was exceedingly valuable, and would help teachers to understand the way in which children's interest in poetry could be most readily secured. With regard to the suggestion as to practical work, many men owed their love of poetry to their early practice in turning English poetry into Latin and Greek verse. He considered that Macaulay and Scott were suitable for young pupils, although there was perhaps some danger that the study of accounts of bloodshed might foster a revengeful or jingo spirit.

Mr. Barnett having replied to the remarks of the various speakers, a vote of thanks to the lecturer concluded the proceedings.

COLLEGE OF PRECEPTORS—CERTIFICATE EXAMINATION.

Errata in Class List—Christmas, 1906.

Boys.

Second Class (or Junior) Pass Division.

Insert Hughes, S. L. F., Private tuition.

Third Class—Pass Division.

Insert Cullum, T. H., Private Tuition, *and omit* in Third Class Honours Division.
Little, F., Wadham School, Liskeard, *add* Distinction in Drawing.
Clery, A. A., and Rogers, H. N., *read* All Saints' Choir School, Clifton, Bristol, *instead of* All Saints' Choir School, Brighton.

The Tasmanian Government has approved of the scheme submitted by the Director of Education for a complete medical examination of all State schools. Local medical men will be appointed at Hobart and Launceston to inspect the scholars and advise teachers, and a woman medical practitioner will be engaged as a permanent member of the education staff to visit all schools where local professional services are not available.

At a recent meeting of the New South Wales Dental Association a paper was read on the result of inspections by dentists of the teeth of school-children. 3,156 children and 73,708 teeth were examined. Over 16 per cent. of the permanent and 24·47 per cent. of the temporary teeth were carious. 94 per cent. of the children had decayed teeth. The half-bred Chinese children showed by far the best dentures.

THE TEACHERS' REGISTRATION COUNCIL.

The Report of the Teachers' Registration Council to the Board of Education just issued shows in detail the statistics of recognized schools and of the Teachers' Register. As to Column A, "it has been found impracticable to keep the Card-Register up to date." The total number on Column B at the end of the year was 11,627—5,779 men and 5,847 women; but the Council "possess no means of ascertaining the names of teachers deceased since admission." During 1906 the total number registered was 1,168 (out of 1,429 applications)—667 men and 501 women.

On March 31, 1906, the net balance in favour of the Registration Fund was £4,899. 14s. 4d. After the publication of the Board's Memorandum on the Abolition of the Register and the subsequent lapse of Regulation 4 the income from fees rapidly fell off, and is at present practically *nil;* but the balance in hand on December 31, 1906, still amounted to as much as £4,323. 7s. The Council remind the Board that their term of office does not extend beyond March 31 next, and that, unless some fresh arrangement is concluded before that date, there will be no authority responsible for the control of the Registration Fund.

As Regulation 4 ceased to be operative on July 31, 1906, since that date registration in Column B has been practically at a standstill. Only five applications have been received under Regulation 3, whilst Regulations 5 (1) (*a*) and (*b*) continue to be a dead letter. It is scarcely surprising that teachers who trained in 1905 and who during 1906 have undergone the probationary service which completes their qualification under Regulation 3 should under present circumstances feel unwilling to incur the expense of registration. A more disturbing consideration arises from the fact that there is no likelihood that the number of such teachers will be appreciably increased during 1907. The uncertainty which has prevailed as to the fate of the Register has proved a serious check to the movement for training. Information received from the training institutions of Appendix D shows that the total number of students in residence is considerably below that of the last few years. The Council feel that, in the reaction following on the proposal to abandon the Register, intending teachers are attaching but little importance to the clause in the Regulations for Secondary Schools (to which the Council have drawn the attention of applicants) stating that after July next stress may be laid on training as a qualification for school work. Moreover, while the supply of secondary teachers remains deficient and the demand for their services increases, they are finding more and more encouragement to enter on school teaching as soon as an academic qualification has been attained.

The Report deals pointedly with the position after March 31 next.

Early in 1906 the Permanent Secretary of the Board stated to the Council at an informal interview that it was the intention of the Government to insert a clause in the forthcoming Education Bill which would bring the present Register to an end, and reasons were adduced in favour of such a step, which were subsequently fully set forth in the Board's "Memorandum on the Abolition of the Register" received by the Council in April. On the publication of the Memorandum the Council at once drew the attention of all outstanding applicants to the clause relating to the Register in the Education Bill, 1906. A few of these applicants withdrew; but the great majority desired that their applications should stand, in the hope that, in some form or other, the Register might yet be continued. In May the Council conveyed to the Board in a formal resolution their regret that the abolition, rather than the reconstruction, of the Register should have been meditated, and urged suspension of action till further steps had been taken to ascertain the possibility of framing a comprehensive Register which would commend itself to the whole profession.

The subsequent acceptance by the Government of Lord Monkswell's amendment to the registration clause of the Bill may be taken as indicating a policy with which the Board feel able to concur, and the Council desire to embrace this opportunity of expressing their hope that the withdrawal of the Bill will not prevent the establishment of the scheme foreshadowed in the amendment, with the cardinal features of which the Council are entirely in agreement. Their experience in the administration of the Order in Council has convinced them that a dual Register with a distinction based on the type of school in which the teacher has served is impossible to maintain. The Council would desire to see a Register in a single column to which the condition of admission should be a high qualification both academic and professional, and in which the name and type of the school in which experience has been obtained, as well as the individual qualifications of the teacher, should be indicated. Furthermore, the Council would express their conviction that the formation of a Professional Council responsible to the Board for the policy as well as for the administration of the Register is a step which would command the confidence and support of the teaching profession. To constitute such a Council fresh legislation would doubtless be needed, but, pending this, the Registration Council would suggest that the Board should, with the advice of the Consultative Committee, apply for the issue of an Order in Council, which should provide for a scheme of registration prescribing regulations in less detail and allowing to a new Registration Council a larger discretion in the interpretation and administration of the Order.

The Council have drawn encouragement from the paragraph in the Board's Report for 1905-6, in which the Board give an assurance that, should any scheme of registration be proposed which would be beneficial and satisfactory to the teaching profession as a whole, the Board would do their best to carry it out. The Council would again express their conviction that the good will of the profession at large will not in itself suffice to ensure that a reconstructed Register will achieve its purpose. The Board of Education now assist, and in large measure control, all forms of education, and any movement to improve the professional standing and secure the professional training of teachers, if not actively supported by the Board, can attain but a limited success.

On the relation of the old and new Registers, "it is not for the Council to offer any solution, but it lies within their province to point out what they conceive to be the factors of the problem." The Report says:

In some way or other the old and the new Registers should be dovetailed. There would, however, in the opinion of the Council, be grave objections to carrying over to the new Register the names of the eighty thousand or more teachers now entitled to be in Column A, together with the eleven thousand registered in Column B. Again, should it be proposed to transfer *en bloc* only those teachers registered in Column B, a similar difficulty would arise; for it would not be possible to refuse the claim for the transference of such teachers in elementary schools as had satisfied all the other conditions for registration in Column B except in regard to the class of school in which they had served. But Regulation 5 (2) (*b*) admitted teachers to Column B on the ground of ten years' secondary experience, and it is calculated that at least one-third of the teachers now eligible for Column A have completed ten years' service in public elementary schools, and hence, under the concession suggested, would be qualified for admission to the new Register. In addition to these there are the head masters and head mistresses of public elementary schools of a year's standing who would similarly claim to be admitted under the head master proviso of Regulation 4.

If these alternatives are both rejected some middle course must be discovered which shall satisfy the joint claims of both branches of the profession, some scheme which will deal as tenderly as possible with the existing rights of registered teachers and at the same time will not swamp with numbers the new Register. Furthermore, the claims of those classes of teachers for whom no provision has been made in the present Register will call for consideration. The working out of these questions might be safely left to a professional Council.

LONDON SECONDARY SCHOOLS.

THE WORK OF THE LONDON COUNTY COUNCIL.

By Sidney Webb.

[From the *Daily Chronicle.*]

The London County Council, in 1904, found London strewn with secondary schools of various kinds, provided with more or less endowment, working usually under schemes settled by the Charity Commissioners or the Board of Education; mostly furnished with good buildings of recent date, and equipped with excellent science laboratories by the aid of the Technical Education Board. These eighty odd schools differed among themselves in scope as in efficiency; but they included some of the best schools that the world has ever seen. In fact, London had even then—though few Londoners realized it—a larger number of secondary schools under essentially public management than either Paris, Berlin, or New York. But London's needs are naturally far larger than those of any other city, and, though its provision of secondary schools was absolutely the largest in the world, it was not at all proportionate to London's population.

There were those who urged that the Council ought to ignore all these existing schools; to leave them to those parents who could pay the necessary high fees; and to provide an entirely new set of secondary schools, under the Council's direct ad-

ministration, for the clever children of the masses of the people. To have provided secondary-school places for thirty thousand children would have cost, in sites and buildings alone, at least two millions sterling, and it would have taken at least ten years to do. Moreover, it would have been wanton waste to have thrown away the opportunity of obtaining access to the clever child of the poor parent to the excellent existing schools. Finally, it must be added, the Council has no compulsory powers of acquisition of sites for secondary schools, and could not, therefore, possibly have obtained the hundred necessary sites except with great delay and at ruinous cost.

The Council's Policy.

What the Council did was to set itself effectively to open the existing secondary schools to all clever children, however poor their parents might be; to raise the efficiency of those which were open to criticism in this respect; and meanwhile to press forward, as fast as possible, the provision, under its own administration, of the additional secondary schools that were required in particular localities. The Council opened the secondary schools by expanding its old scholarship ladder into a broad educational highway. Every year all the boys and girls who by the age eleven to twelve have reached at all a good position in the public elementary schools (non-provided as well as provided) are nominated by their head teachers, without any restriction as to their parents' means, together with any others whom the head teachers think might possibly be up to the minimum level required. To these twelve thousand candidates are added any who choose to apply from secondary schools, poor-law schools, elementary schools outside London, or merely under home tuition. From this mass of candidates those are chosen for junior county scholarships, without limit of number, who show themselves at all fit, by brightness of intelligence or any sort of intellectual promise, for five years' secondary schooling. It is, of course, a difficult task to make the selection and to set the standard. As particular children many happen not to do themselves full justice, the past school record is allowed some weight. It is inevitable in so huge a number that some mistakes should be made.

Improving the Schools.

But, take it all in all, there is every reason to believe that the Council's "capacity-catching net"—the greatest in the world—picks out practically all the children who, between eleven and twelve, show any kind of intellectual promise. These get free admission to any efficient secondary school at their own choice, so far as accommodation permits; together with allowances for maintenance to those who require them, beginning with £6 a year and rising to £15. And, beyond these junior county scholarships, there are, for those who prove themselves fit, or who develop later, probationer scholarships and intermediate county scholarships, also tenable in the secondary schools. Altogether there are now about six thousand of the Council's scholarship holders in these schools, forming about one-fifth of the whole attendance. There will, in a few years, be at least double that number. The Council at the same time quickened the improvements that were everywhere in progress in these schools by greatly increasing the scope of its periodical inspections; by pressing for additional staff; by demanding more highly qualified teachers; by urging smaller classes, and by offering to increase its grants in aid to enable this increase in efficiency to be made. And in all that the Council has done it has constantly striven to maintain the individuality of each school, to respect the discretion of the governors as to how it should be improved, and to preserve the all-important elements of initiative and variety. In some cases the governing bodies have, out of their endowments, practically rebuilt, or greatly enlarged, the school premises.

Increasing the Supply.

Simultaneously the Council worked at the establishment of additional secondary schools under its own administration wherever they were required. As the need was urgent, and there was no time to wait for new buildings, the first provision had to be extemporized in various ways. Four of the twelve pupil-teacher centres, which the Board of Education's new regulations were rapidly emptying, were converted into secondary schools for girls. One good girls' school, hitherto run for profit, was voluntarily handed over to the Council. Another was opened in a building that had been presented to the Council. Some other premises were purchased. A mixed school for boys and girls was handed over, placed in new premises, and greatly developed. Three entirely new secondary schools for girls were temporarily accommodated in newly-built elementary schools which were not at once needed for elementary children. Altogether, the Council has got going, under its own administration, within two years, no fewer than twelve new secondary schools, which are in full working order. There are fifteen more at various stages of progress, several of them to be opened in September next. No other Local Education Authority in the kingdom has, in secondary education, made even a quarter of this amount of progress.

Some may ask: Is it worth while striving, at great labour and some little expense, thus to equip London with an adequate supply of good secondary schools? My answer would be to ask another question. To whom? If I am asked whether it is worth while to the well-to-do man, able to pay high fees for secondary schools for his sons and daughters, I am not prepared to say that (if he thinks only of his selfish interests) he will gain much. But that it is worth while to the struggling middle-class man, who has hitherto paid so much in rates, and to the great mass of the wage-earners, that their children should—at any rate, if clever—have access to as good an education as the children of the rich seems to me obvious.

And that it is worth while for the community as a whole to foster every child of genius, however lowly born, and to secure to every clever child, even if not a genius, all the mental training he or she is capable of, is, to any economist or statesman, beyond dispute. It is the plain duty of the London County Council, as it is to the real interest of every Londoner, that the Council should go on with its policy, and complete its great task of effectively securing, at least in the educational field, real equality of opportunity.

THE ART OF SEEING.

By Vernon Gibberd.

The lack of observation is coming to be regarded as a great evil of modern education, and hence the importance of "Nature study," the value of which as an element in education lies in its witness to the Art of Seeing, wherein lies also the utility of art as an educational agency. For what we see and how we see makes all the difference to our mental equipment, and goes to determine not only success in life, but also the development of the higher faculties of our nature.

Of all the sense-organs the eye is the most delicate, the most complex, the most capable of variation. One has only to recall the fact that the number of fibres in the optic nerve amounts to something like 250,000, each of which is capable of innumerable degrees of sensation, to realize what possibilities exist in the organ of sight as a source of knowledge of the world of phenomena. The art of seeing with sagacity and discernment is, at least in its highest developments, one of the subtlest of mental processes. Into it enter a man's education, his tastes and temperament, perhaps too, his religion, and certainly, as one might infer from Wordsworth, his philosophy and morals. For vision, though projected towards that which is external, is largely subjective and idealistic. And yet, while elementary observation is one of the simplest of physical sensations, as a matter of fact, there is more diversity manifested here than in the operation of any other of the senses. No two people see the same object with precisely the same degree of perception. Between Peter Bell, into whose heart "Nature ne'er could find the way," and William Blake, the painter-poet, who declared that he saw angels nestling in the boughs of trees and in the swaying corn, there are myriad degrees of visual power. What but an instance of the fecundity of observation is that perennially interesting book "The Natural History of Selborne"? Such work as Gilbert White did could be accomplished by any one with an observant eye; and, apart from the fact that such a study of Nature is one of the purest of human pleasures, it must tend to have an influence on the whole range of intellectual perception, besides laying a possible basis of important scientific conclusions. This latter result is finely illustrated in the work of Charles Darwin and Alfred Russel Wallace, whose methodical observation of natural phenomena led them to the apprehension of the doctrine of evolution. In the cases of all the three, simple observation was the basal element in their work; and, although this power is within the reach of all, it is surprising to find how sparsely it is distributed and how little it is cultivated. Let a man pause for a moment to consider the fact and he will soon realize how little he actually sees in the

world in which he moves from day to day. "I have noticed," wrote Richard Jefferies, "that people are never so astonished as when some fact of natural history is unexpectedly pointed out to them, where it must have been for a long time under their very eyes. There are people who have never seen a humble bee drill a hole in the nectary of a snap-dragon, and yet have whole gardens full of flowers." How many even could stand the test to which that immortal hero Huckleberry Finn was subjected?—

"Say—when a cow's lying down which end of her gets up first? Answer up prompt now: don't stop to study over it. Which end gets up first?"

"The hind end, mum."

"Well then, a horse?

"The forrard end, mum."

"Which side of a tree does the moss grow on?"

"North side."

"If fifteen cows is browsing on the hill side how many of them eats with their heads pointed in the same direction?"

"The whole fifteen, mum."

"Well, I reckon you have lived in the country."

This, let it be added, is but an instance of the simplest observation. It may indeed, be the beginning—or it may be the end—of a process pregnant with important results. The difference between such vision and scientific observation really lies in the constitution of the mind which receives the sensation. For, as it has been accurately pointed out, the seeing eye depends greatly on the inquiring mind, and, as a matter of fact, reflection forms a large part of what is popularly known as observation. "To know a thing," as a modern writer says, "means to bring it in relation to our own mind, and our mind is not a mirror which passively reflects, but an agent which helps to constitute the object of its ken." The scientific observer reflects on what he sees, as Galileo reflected on the swinging lamp in the cathedral of Pisa and conceived the invention of the pendulum; or as Sir Samuel Brown pondered over the spider's web which he saw suspended in his garden one autumn morning, and evolved from it the idea which he worked out in the construction of the suspension bridge over the Tweed. It is the mind which asks the why and the wherefore of what it sees, which relates what the eye beholds to the cognate knowledge stored up in the mind, that constitutes the difference between untutored and scientific observation. Hence, as says a modern educationalist, "if we desire"—that is, if teachers desire—"minute observation in a general direction, we must cultivate special knowledge to correspond. If we wish to encourage general observation, we can only succeed by cultivating wide interests."

Prof. Bain, in his work "The Senses and the Intellect," shows that the sensations of sight are compounded of visual spectra and muscular feelings, and that the difference between one individual and another so far as regards the art of seeing depends on the extent and degree with which visible forms can be retained. Only in the difference of natural adhesiveness in reference to these sensations can the enormous differences observable in the acquirement of persons similarly situated be explained. At the same time, he admits—and from the teacher's point of view, this is important—that susceptibility may be heightened by a habit of attention and by the interest attaching to a particular object. Another curious feature about these sensations to which Prof. Bain calls attention, and which is borne out by experience, is that, while it would seem that the muscular sensibility ought to be equally impressed with all kinds of forms, in reality this is not so, and this difference he considers must be explained by some circumstance deeper than the circles of vision. This fact may possibly account for the predilection of some minds for mathematics and of others for science or some other department of mental activity.

Referring again to the reciprocity between things seen and knowledge cognate thereto, one cannot doubt that in many cases observation may be helped to a fruitful issue by the existence of such special knowledge. Newton's mind, for example, was characteristically mathematical; and it has been pointed out that, however fascinating a phenomenon might be, he had always his mind ready to seize it with the mathematical pincers and to regard it in that view alone. To this must be attributed his great discovery of the Law of Gravitation. It was only such a mind that could identify the two facts of the fall of heavy bodies on the Earth and the attraction between the Sun and the planets, which he had previously been contemplating as two separate unrelated phenomena, and so resolve from the identification the great discovery with which his name must ever be associated.

On the other hand, it must be admitted that the presuppositions and prejudices of theorists are apt to warp and distort the vision of even the simplest facts. It is confessedly difficult to approach the investigation of facts or phenomena with a mind free from bias; but, unless this be done with at least some degree of thoroughness, the things seen are sure to be coloured by preconceptions of the investigating mind. Goethe, for instance, with certain presuppositions on the theory of colour, which had not been subjected to the test of adequate investigation, began to suspect the accuracy of Newton's theory on the subject, and with this suspicion in his mind pursued a course of study which seemed to confirm his suspicions. Eventually he firmly convinced himself not only that Newton was wrong, but that he had himself arrived at the truth. His conclusions were, however, ultimately disproved. John Ruskin was another theorist, who, as his latest biographer says, was perpetually constructing, *a priori* out of his own head, new schemes and theories without any systematic knowledge of theology or history or economics or even art. One of his frequently iterated doctrines, for which (be it admitted) there is much to be said, was that there is a distinct relation between art and national life and character; but it is surely carrying the analogy too far to find a connexion between the chimneys of a country and its national character. But this he professes to do, finding, for example, in the chimneys of Spain an absence of soul; in those of Germany the awkward effects of a tasteless nation; and in English structures a monstrous ugliness too awful to contemplate. This only shows the folly of looking at facts through the spectacles of one's theories. What is true in relation to actual physical vision is no less true in regard to mental perception, of which instances abound. The revival of the contention that Shakespeare's plays were written by Bacon furnishes a startling illustration of the distorted vision that results from selecting and arranging the facts so as to dovetail with the theory. Such examples stand as beacons of warning against prejudice, in reference to which the student of phenomena, seeking to understand their why and wherefore, must be ever on his guard. One of the very first principles of the art of seeing is to clear the mind of prejudice and preconception. As Richard Jefferies says in his edition of Gilbert White:

Part of his success was owing to his coming to the field with a mind unoccupied. He was not full of evolution when he walked about, or variation, or devolution, or degeneration. He did not look for microbes everywhere. His mind was free and his eye open. To many it would do much good to read this work, if only with the object of getting rid of some of the spiders' webs that have been so industriously spun over the eyesight of those who would like to think for themselves.

But there is not only scientific vision—there is also the vision of the artist, which in some senses is a step higher, since the progress of education is ever from the concrete to the abstract. The difference between the two is partly physical and partly psychological. There may be a highly developed susceptibility to the infinite variety in the imagery of the world around, but there must also be a sense of beauty; for, as Emerson says, in a fine phrase, "though we travel the world over to find the beautiful, we must carry it with us or we find it not." This sense may be nothing more in its primary manifestations than a tendency of the mind to lay special stress on the beautiful and the sublime; but when this exists the naturalist passes into the artist. Even matter-of-fact Gilbert White had an artist's eye for landscape; for we are told that frequently, as he rode along the South Downs, he would check his horse to admire those very scenes which Turner has made classic. There can be no doubt, indeed, that, just as the power of simple observation may be cultivated, so may the æsthetic sense be fostered and developed; otherwise it may lie dormant and unconscious. And in just this connexion lies the educational value of art; for, as Aristotle says, "Art, if it cannot create, may promote an activity." There is profound truth in the remark of a modern writer that "what we see and how we see depends on the arts that have influenced us." Hence the great function and purpose of art—she helps us to see. Art is an aspect, a point of view, a clarifier of vision. She takes the scales from our eyes and spreads before our view all the wonder and bloom of the world. "We do not really see anything," it has been said, "until we see its beauty." We see in fact what we bring the power to see, and thus art becomes the great revealer of unperceived beauty, the enlightener and interpreter of the inanimate world. Those philanthropists that seek to widen the outlook and elevate the tastes of the masses by holding picture exhibitions in the East End have had their cavillers, but

at least such agencies do something to develop this art of seeing, which in these days of commercial absorption is work well worth doing. It is not for nothing that a permanent Art Gallery should have been erected in Whitechapel. And Toynbee Hall, with its multiform activities, has been to not a few hard-working toilers a means to an open vision. Said one of these recently: "Toynbee gave me eyes for pictures, ears for music, and a heart for poetry." This is good in and for itself and still more so for the ultimate effects of such an acquisition. Indeed, to be able to perceive beauty in art is often a sure means to the perception of beauty in Nature. Browning says with perfect truth:

> We're made so that we love
> First when we see them painted things we have passed
> Perhaps a hundred times nor eared to see,
> And so they're better painted
> . . . . . .
> . . . Art was given for that.

Poetic vision—to carry the subject to a higher plane—is as much a reality as scientific or artistic observation. The poet may indeed have the power of scientific vision, as Tennyson had; he must certainly possess the artistic sense, but, added to this, there is with the great poets a deeper sense still. The poet penetrates beneath the surface of things. He relates what he sees to the great truths and ideas of life. Not only does he open the eye to undreamt-of beauties; he develops the vision of that inward eye which is the bliss of solitude. Things seen are to him symbols of spiritual realities. Not infrequently he divines some hidden truth, or helps to the realization of some imperfectly comprehended idea. He interprets the world of phenomena to the mind and heart in language they can understand. He sees the things of the world which are within reach of the simplest observation, but he sees also their beauty and divines their import. The springs of human conduct that Shakespeare reveals, the interpretation of Nature in Wordsworth, and the keen psychological insight of Browning all witness to the keenness of the perceptive power of the poet. To the scientist *qua* scientist the facts of Nature and the world are all-sufficient. He is concerned with them as facts; but the poet discerns relations and analogies, and strives to reach the idea behind the phenomena. "Poetry's sole aim," says Maeterlinck, "is to keep open the great road that leads from the seen to the unseen." In a word, the poet's progress is always from vision to perception.

The analysis of this fascinating subject would be incomplete without a closing reflection on that inner vision of the soul, that evidence of things not seen comprised in the word "faith." This finer perception of the spirit which controls and informs every kind of vision has, apart from all dogma and doctrine, whether speculative or theological, a place to fill and a purpose to serve. All high poetry shades off imperceptibly into the region of faith. For faith is in reality a point of view. Whatever basis the religious sense may possess in theology or philosophy, it is in essence an outlook on life through a medium which transmutes and conditions everything which is brought to view. Life, Duty, Destiny, are all conditioned by the religious outlook; and this is an aspect of life that has enormous influences on character and action. Far more than the poet it looks beyond the things which are seen to the things which are unseen, and seeks to apprehend the idea that lies behind the phenomena of the visible world. It is of faith as a form of vision that Tennyson is thinking when he says in "The Ancient Sage":

> She sees the best that glimmers through the worst,
> She feels the Sun is hid but for a night,
> She spies the summer through the winter bud,
> She tastes the fruit before the blossom falls,
> She hears the lark within the songless egg,
> She finds the fountain where they wailed: "Mirage!"

The Senatus of Edinburgh University have approved of a proposal that female students should be admitted to the law classes with a view to taking the examinations for the B.L. or LL.B. degrees. An exception, however, is made in the case of Forensic Medicine, from which the Senatus are of opinion that the female students should be excluded. The University Court have the final decision in the matter, but it is expected that they will concur with the opinions of the Senatus. While this new privilege, should it be granted, would not confer on the women the right to act as law agents or advocates—this being under the control of the Board of Examiners under the Law Agents' Act and the Faculty of Advocates respectively—it would qualify women for posts for which degrees in Law are necessary, or for which it is preferable that a degree should be held.

REVIEWS.

Euripides.

(1) *Essays on Four Plays of Euripides.* By A. W. Verrall, Litt. D., Fellow of Trinity College, Cambridge. (7s. 6d. net. Cambridge University Press.) (2) *The Moral Standpoint of Euripides.* By W. H. S. Jones, M.A. Selwyn College, Cambridge. (2s. 6d. net. Blackie.)

(1) These fresh essays of Dr. Verrall's may be regarded as a sequel to his volume "Euripides the Rationalist," though the topics are mostly different. They discuss the "Andromache," the "Helen," the "Heracles," and the "Orestes"; and the discussion is not merely warranted, but necessary, in view of current criticism, whose adverse opinion on the first three plays, as wholes, conflicts strangely with the acknowledged eminence of the author as a dramatist, and with the judgment of his Athenian audiences, while the "Orestes," though praised and appreciated, has yet some special points, notably in the latter part, on which "there is something of general importance to be said." With regard to each of the first three plays, Dr. Verrall believes that "judgment is at present embarrassed by a fundamental misconception." The "Andromache," he thinks, does not deserve the current reproach of "formless and unintelligible construction": it is criticized as if it were an independent work, a complete story; whereas, in his opinion, it is not and does not pretend to be so, but is a sequel, a second part. Whether the first part was dramatized by Euripides himself (as Dr. Verrall thinks probable) or not, at any rate, as a story, it certainly pre-existed. Dr. Verrall sets forth the preceding story, so far as it can be ascertained, and then gives the sequel, so far as is necessary to show the connexion. The reader is thus put "in a position to estimate the evidence alleged, from the extant play and from criticisms upon it, that the play is not intelligible *per se*, but requires for its explanation some such preface as" Dr. Verrall has constructed. "The current exposition is not defective, but null: what it leaves unexplained is just everything—the story, the meaning, the main lines of the piece." Dr. Verrall's effort of justificative explanation is well worth patient consideration. The problem of the "Helen" offers difficulties of a different character. The story is clear enough, at least superficially, and Dr. Verrall raises no question on the point; but "what baffles us here is the singular quality of the play, the fact that in spirit and tone it is unique in the drama of Euripides (and, indeed, of Athens, so far as known to us), and the question why this difference should be." "Euripides here takes, in the choice and treatment of material, precisely the course which everywhere else he carefully, and even painfully, avoids. Instead of the familiar realities of common experience, 'the things we handle and with which we live,' he suddenly gives us, for the foundation and essence of his story, the utmost extravagance of imagination, and introduces into the very heart of the action a stupendous miracle, which takes place almost before our eyes." The play is currently estimated as a melodrama, and is naturally pronounced weak. "But," says Dr. Verrall, "what if it were a playful imitation of melodrama, in which the vagaries of Greek tragedy are deliberately exaggerated? What if the circumstances of the production were such that only a humorous theme and playful treatment were suitable, or even admissible?" In the "Heracles" the poet was evidently in dead earnest, but what was his purpose? "The main thing superficially visible is that, whatever Euripides meant, he did not mean to be plain." Why not? The thing is to account for the ambiguity and the obscurity; and this the current exposition of the play, which presumes the religious legend of the hero to be the basis of the story, fails to do. Dr. Verrall contends that "the legend of Heracles, as commonly told, is not to be supposed as part of the story, but replaced by some totally different conception of Heracles, and of his mental and physical history." "To me," he says, "it appears, like most of the Euripidean plays, to have neither life, nor unity, nor sense, if we suppose that, as in Aeschylus and Sophocles, the story is a legend or legendary in character, and that the theology and miracles of popular religion are part of the assumptions; but to become luminous, profound, and intensely interesting as soon as we comprehend, and follow to the consequences, the saying attributed with justice, and probably with truth, to Euripides himself, that the facts of his drama are 'the familiar things we use and live among.'" In this view, the play, instead of being "a grotesque abortion," makes Heracles "tragic, consistently tragic, and tragic beyond description": "for power, for truth,

for poignancy, for depth of penetration into the nature and history of man, this picture of the Hellenic hero may be matched against anything in art." The "Orestes" introduces the reader to a profound contrast with the "Heracles," exemplifying in particular the Euripidean importance of the distinction of time—"of the epoch in the world's history and in its social, political, religious development at which the stories respectively are placed." The world of the "Heracles," though not miraculous, is yet far remote: "the world of the 'Orestes' is in all essentials that of the fifth century, the state of society such as existed then, and, in some most important particulars, such as notoriously had not existed long: nothing is antique, not even possibly antique, except the names of the *dramatis personae*, whose minds, conduct, and status are, like the surrounding society, absolutely modern." One of the most interesting bits of criticism leads to the conclusion that the "Orestes" was not originally planned for a chorus, and was revised or recast. Classical students will, of course, study these essays in detail. The general reader, with classical reminiscences, will find them fresh, bright, ingenious, and vigorously developed. Some rather difficult points of detail, partly connected with the Essays, partly not, are considered in an appendix of notes.

(2) Mr. Jones's pamphlet consists of two parts: "(1) the essay proper, dealing with the views of Euripides himself on blind ἀνάγκη and the intelligent φύσις of man; (2) the index, which will enable the reader to form his own conclusions about contemporary morality." Mr. Jones believes "that Euripides, writing during the period which gave birth to Greek ethics, reflects the tendencies which were afterwards developed by philosophers," and considers that "herein lie the interest and importance of the poet's own views." The essay compresses an enormous number of laboriously gathered details into an extremely narrow space; but why the discussion of such controversial matters should not have been provided with an ample platform—say ten times the space—is not apparent. The suggestions, and especially the references, will be very useful; and it is to be hoped that Mr. Jones will be encouraged in his intention to publish similar indexes to the other non-philosophic Greek writers. At the same time his conclusions in the present publication must be received with critical hesitation: obviously it is most hazardous to read the mind of a dramatist from the speeches of his characters. Of course, Mr. Jones is fully aware of this; but that does not absolve his readers from constant and strict verification of particular conclusions. "The object of the present essay," he says, "is to try to explain why Euripides, while cordially agreeing with those who denied the existence of the gods, and, fully convinced that there was a real contrast between νόμος and φύσις, nevertheless refused to infer either that there was no such thing as right and wrong, or that the only true 'right' was 'might.'"

Mathematical Drawing.

Mathematical Drawing. By G. M. Minchin, M.A., F.R.S., and J. B. Dale, M.A. (7s. 6d. net. Edward Arnold.)

Very many of the manuals which deal with the subject of geometrical drawing ignore entirely the necessity of proving the given methods of construction. It is, therefore, all the more pleasing to find mathematicians of the rank occupied by the authors of the present volume ranging themselves with those who uphold the contrary view, and combining in their work both theory and practice. The new treatise is one of great interest and value. Its primary object is (1) to discuss thoroughly, within definite limits, the means of making accurate constructions of figures occurring in mathematics more advanced than elementary geometry; and (2) to point out some at least of the applications of such figures in either mathematics or physics. It is assumed that the reader has already gained considerable knowledge of the theory connected with his subject, and that he is therefore in a position to satisfy himself as to the validity of particular constructive processes; in other words, he is supposed to stand on a higher plane as regards the theoretical side of mathematics than that which he has reached in practical work. Nevertheless, little is left by the authors to be accepted mechanically, and the text occupies itself with giving a necessarily brief, but very scholarly, outline of leading principles, and with clearly demonstrating, in general, the correctness of solution of the problems discussed. The writers of the work are justified in anticipating that their own full investigation of problems of standard character, combined with their excellent exposition of important principles, will first call into play, and then foster, whatever originating power the student may happen to possess.

Turning to the details of the text-book, it will be found that the first chapter (which is comparatively short) deals with methods of algebraical products geometrically, and with the rectification of circular arcs. It also describes at length the theory of Amster's planimeter and the way in which measurement of areas by a planimeter may be utilized as a means of determining centroids and moments of inertia. The second chapter is devoted to an interesting discussion of metrical (as distinguished from projective) methods of constructing the various conics. This chapter is not intended to be exhaustive, and, seeing that familiarity with the geometrical properties of conics is taken for granted in the student, other methods should certainly suggest themselves. Thus, for example, in dealing with the parabola, the following problem is considered:—"Given the vertex and one other point on the curve, and also the direction of the axis, to construct the curve." The process employed is fundamental and especially apt, as it is analogous to a construction used in the case of the ellipse. But the very simple alternative method given below is not noticed, though it at once presents itself:—Since the subtangent corresponding to any point on the parabola is bisected at the vertex, and since half the subnormal gives the distance from the vertex to either focus or directrix, the problem may be immediately reduced to a focus-directrix construction—one which, however, strange to say, is also neither directly discussed in the text nor set for independent investigation among the exercises on the chapter. The third and fourth chapters constitute by far the greater part of the book. Of these, the former gives a skilful treatment of the geometrical description of various well known curves, such as the cycloid, the curve of sines, the catenary, the Cartesian oval, &c.; it enumerates a few of their leading properties, and suggests some of their applications; it explains the graphic solution of cubic equations and of biquadratics; and it introduces the student to the theory of dipolar angles and the use of dipolar co-ordinates. The subject of the latter, and closing, chapter is projections, of whose principles the authors give a connected account sufficient for their purpose, illustrating it by the consideration of various problems. Here, too, cross-ratios, involution, the theory of pole and polar, and the properties of conics depending on them find place, and allied problems are solved. Students will find throughout the book abundance of helpful and well executed diagrams and numerous exercises. Occasional misprints occur; but such are scarcely to be avoided in a first edition, and, fortunately, in this instance they may, as a rule, be readily detected; so that they are not serious, even though their presence is to be regretted.

Ethics according to Spinoza.

Spinoza: a Handbook to the Ethics. By J. Allanson Picton. (5s. net. Constable.)

Mr. Allanson Picton expounds Spinoza's ethical system with pronounced sympathy and with unflagging zeal. He professes a practical aim merely: he endeavours "to avoid discussing the philosophy of Spinoza more than is absolutely necessary to an understanding of his moral code"; his exposition "always keeps in view the moral and religious, rather than the intellectual, value of the great Master's teaching." The average modern student, he believes, encounters two difficulties: first, Spinoza's use of certain fundamental and familiar terms in a very different sense from that which the student has been accustomed to attach to them; and, secondly, the admittedly unfortunate form of mathematical demonstration in which the work is cast, together with the general effect of the comparative remoteness of seventeenth-century mental habits from those of the present day. To meet these difficulties, then, he proposes to give "a *précis* of the Ethics dissociated from the Euclidean form and set forth in language which, if not metaphysically exact, may at least enable readers of ordinary intelligence to grasp the common-sense convictions forming the basis and main structure of Spinoza's religion."

The scope of ethics, in Spinoza's treatment, was much wider than as now ordinarily understood. "For, whereas we generally mean by it the principles of social duty as between man and man, individual or collective, Spinoza included in it the whole relations of the individual to the universe of which he forms part. It was therefore necessary for him to set forth not only his ideas of right and wrong as between members of the human family, but also the eternal nature and constitution of the universe

as conceived by him." This latter and fundamental consideration accordingly lands the expositor at once in one of the chief difficulties of the Ethics; and, with every allowance for Mr. Picton's restricted purpose, the beginner will probably wish that Spinoza's idea of substance and its all-important involvements had been worked out philosophically in a stringent argument, especially as he is not at all unlikely to be somewhat startled at the initial propositions. Elsewhere, on occasion, he will similarly feel the need of ampler explanation or more incisive criticism; but, on the whole, the exposition will be found interesting and profitable, both virtues being ministered to by liberal illustration from modern philosophers, from the facts of history, and from recent conceptions of progress, scientific and social. The author does not conceal his own convictions, nor does he strain his work to the purposes of a theological pamphlet; but, at the same time, the volume needs to be studied with alert criticism and reserve.

Speaking of Spinoza's "Theologico-Political Treatise," Prof. Höffding says: "His historical sense expresses itself in the demand that in the exposition of a book all that is known of the personality of the authors be taken into account: we must also examine into the source of their writings." The principle seems to be specially applicable in Spinoza's own case; and so we should have been glad if Mr. Picton had prefixed some account of the master's early life, upbringing, and experiences, to cast light on his moral and religious attitude. Again: "Curiously enough," writes Prof. Höffding, "each of the three elements which, in Spinoza's thought, were characteristically woven into a unity afterwards in turn found enthusiastic supporters—first the religious element in the Netherlands; then the idealistic in the German Renaissance towards the end of the eighteenth century; and, finally, the realistic amongst the philosophers and scientific men of our day." Some connected account of such developments might well have been appended, to bridge over the abrupt contrast of Spinoza's material and moral environment and the mental habitudes of his readers in our own times. The work, however, is written with conspicuous care and earnestness from the author's own point of view.

GENERAL NOTICES.

MATHEMATICS.

Integral Calculus. By Alfred Lodge. M.A. (4s. 6d. G. Bell.)

An interesting sequel to the author's text-book on the differential calculus. Its primary object is to meet the needs of students beginning the study of integrations and requiring a sound working knowledge of the calculus as an aid to physics and mechanics. By the general plan of the book, and by the methods employed in the treatment of details, the writer has been successful in bringing out the interesting nature of his subject. The standard processes are made in turn the text of careful discussion and are then applied in the usual way to the finding of centroids, to the determination of moments and products of inertia, and to the solution of scientific problems of various types. Although the writers on the calculus generally agree in considering the Eulerian integrals beyond the scope of a purely elementary work, Mr. Lodge, in view of their importance, has ventured to introduce a chapter on "The Beta and Gamma Functions," dwelling more especially on the latter. An excellent introduction to differential equations is likewise included in the volume. Mr. Lodge differs from many of his brother authors in constantly using differentials rather than differential coefficients as the subject of argument. A generous supply of exercises will be found at the close of the different sections of the treatise.

Advanced Algebra. By Herbert E. Hawkes, Ph.D. (6s. 6d. Ginn.)

Interesting, thorough, and perhaps more than ordinarily suggestive, Dr. Hawkes's "Advanced Algebra" deserves a prominent place amongst standard treatises of its kind. The author writes for the higher classes of secondary schools and for students taking a short college course. His instruction is equally well calculated either to give to the more superficial student an intelligent and sufficient knowledge of the advanced portions of general algebra or to afford to the prospective mathematician an excellent introductory training. The reader is regarded as having received thorough grounding, and therefore finds in the earlier chapters of the volume only what is necessary for a valuable revision course. Particularly worthy of note in this preliminary part is the description of the first stage in the general process of solving a problem in algebra. The author is very happy in his mode of establishing the claims of negative irrational, imaginary, and complex numbers both to existence and to consideration; indeed, it is the practice of first challenging and then disposing of difficulties and objections which helps to endow the work as a whole with a certain originality. Bearing in mind the special students for whom he writes, Dr. Hawkes omits, as a rule, whatever demands on the part of the reader a knowledge of such subjects as the calculus. Nevertheless, there are many cases in which he frankly assumes a principle in order that he may make use of results that depend upon it and also have an intimate connexion with his own theme. Amongst the advanced subjects of which the outlines are ably discussed are theory of equations, determinants, partial fractions, &c. It is almost superfluous to say that the book is well provided with exercises. The answers to them are, however, in general not given.

Graphic Algebra for Beginners. By C. Carter. (1s. 6d. Normal Press.)

The writer has succeeded in giving in limited space the brief outline of a large amount of general information on the subject of graphs. The matter is useful, and usually it is clearly expressed, although, in addition to occasional misprints, there are some inaccuracies for which the compositors cannot be held responsible. The style of publication is rough, and the diagrams are but indifferently reproduced. A key to the exercises has been issued for the use of teachers and private students.

The Elements of Solid Geometry. By Charles Davison, Sc.D. (2s. 6d. net. Cambridge University Press.)

In every respect an excellent addition to the comparatively limited number of school text-books that deal solely with solid geometry. The subject-matter treated in the Eleventh Book of Euclid constitutes the best of the earlier sections; but many supplementary propositions of value and importance have been introduced. A thorough elementary treatment of the principal geometrical solids, including the sphere, follows, and, in fact, forms the major portion of the volume. Numerous exercises, both of a geometrical and of a numerical character, find their accustomed place in the course of the work.

Oblique and Isometric Projection. By John Watson. (3s. 6d. Edward Arnold.)

The author has evidently spared no pains in the preparation of this little volume, and some of the simpler principles of projection can be learnt from its pages by the unaided student. The subject is, however, one for the thorough comprehension of which oral instruction and models appear to be absolutely essential, and it cannot be anticipated that Mr. Watson's book will do more than serve as a very valuable help to the student anxious to impress on the mind facts already fully explained and acquired through the actual handling of carefully examined models. Many examples are worked out in detail and illustrated by excellent diagrams, which form a feature of the volume.

ENGLISH LITERATURE.

A Treasury of English Literature, from the Beginning to the Eighteenth Century. Selected and Arranged, with Translations and Glossaries, by Kate M. Warren, Lecturer in English Language and Literature at Westfield College (University of London). With an Introduction by Stopford A. Brooke. (7s. 6d. net. Constable.)

The volume is primarily intended to be a companion to Mr. Stopford Brooke's "Primer of English Literature," and Mr. Brooke has furnished a substantial introduction. Miss Warren "has tried to select passages interesting in their subject-matter or in their literary relationships, as well as representative of the authors in their best and most characteristic manner." The earlier periods are represented in unusual fullness: thus it takes more than 100 pages to get down to the Old English (Anglo-Saxon) Chronicle, and more than 300 pages to reach the Elizabethan literature; but considerable space at the foot of the page is occupied with translation and notes. Still, the whole volume runs to nearly 1,000 pages, and one can hardly complain of disproportion, especially as the older literature is not so accessible as the later. The selection has evidently cost much labour. The work will be very valuable to students, and it will be welcomed by the general reader. It is handsomely printed and got up.

The Oxford Treasury of English Literature. Vol. I.: *Old English to Jacobean.* By G. E. Hadow, Tutor in English Literature, Lady Margaret Hall, Oxford, and W. H. Hadow, Fellow of Worcester College, Oxford. (3s. 6d. Clarendon Press.)

The complete work will consist of three volumes "the object of which is to indicate, so far as the limits of space permit, the chief landmarks in the progress of English literature," and to supply the needs of "students who wish to look at the subject in general perspective before proceeding to a closer and more detailed survey of special forms or periods." The present volume traces the course of prose and poetry (other than dramatic) from "Beowulf" to the writers of the Jacobean age, by a selection of characteristic examples, with such brief introductions—critical, explanatory, or biographical—as the occasion seems to require. The selection is made to illustrate the literary development, and to awaken the literary interest. In the Old English the originals are replaced by translations; afterwards up to Lydgate and Occleve—and also in Spenser—the old spelling is retained, for reasons of rime and metre. The most difficult task of choice has been most judiciously performed, and the connecting remarks are very helpful for direction and suggestion. An excellent work, beautifully printed, and agreeably got up.

"Cambridge English Classics."—(1) *The English Writings of Abraham Cowley:* Vol. II., *Essays, Plays, and Sundry Verses.* (2) *The Works of Francis Beaumont and John Fletcher.* Vol. IV. In both cases the Text edited by A. R. Waller, M.A., (4s. 6d. net each. Cambridge University Press.)

Mr. Waller maintains the same care and industry that we have remarked in his former volumes, and that constitute the special value of the series. (1) The first Cowley volume contained the whole of the poems collected for the folio that appeared the year after the poet's death. The present volume contains the poems not included in the folio, its prose contents, and Cowley's English plays. Mr. Waller has rooted out the best editions—often an arduous undertaking—and appended important variants as usual. The Latin poems will not come into the series; but "material for a Supplement of Notes, biographical, bibliographical, and critical, is being collected, and will be published, it is hoped, at no very distant date." (2) The new Beaumont and Fletcher volume contains five plays—"The Tragedy of Valentinian," "Monsieur Thomas," "The Chances," "The Bloody Brother," and "The Wild-Goose Chase." The appendix gives the variants and also certain additions to the textual notes on three of the plays in the second volume. The textual difficulties have been complicated by the discovery of differences in copies of the second folio, all dated 1679. Each succeeding volume impresses the importance of this series.

Southern Writers: Selections in Prose and Verse. Edited by W. P. Trent. (5s. net. Macmillan.)

Though designed primarily for use in Southern schools and colleges, these selections will make good reading anywhere. They ought "to increase a pupil's interest in American literature and history as a whole, and also to open his eyes to the fact that, while the South has never been prolific of books and writers, its people have contributed a larger and a better share to the literature of the Republic than is generally admitted." Mr. Trent's studies for his large work on the "History of American Literature 1607–1865" have stood him in good stead in the difficult task of selection. The introductory biographical notices are full and careful. The collection is very fairly representative, and altogether most interesting.

ENGLISH COMPOSITION AND READERS.

English Composition. By Amy Kimpster, Lecturer in English and Assistant Mistress of Method at the Derby Training College. Part I.: *The Teaching of English Composition.* (2s. Norland Press.)

A sensible general introduction on English composition as a school subject, a scheme of lessons bearing on language training, notes on the incidental teaching of English composition (chiefly oral) in lower classes (from infants up to children of ten to eleven), suggestions as to methods in Standards IV. to VI. (or their analogues)—these are the subjects of the smaller half of the volume (pages 1–134). The remainder (pages 135–299) is occupied with exercises, chiefly oral, which illustrate "word-building, sentence-building, and composition." It is all worked out with elaborate care, but we cannot resist the impression that it is overdone, and that much of the drill is premature.

We have five more volumes of Prof. Dr. J. Klapperich's strenuous series of "Englische und Französische Schriftsteller der neueren Zeit für Schule und Haus" (Glogau: Carl Flemming). (1) Band XXXIII., *Parliament and Orators of Britain* (geb., M. 1.40), ably edited by Dr. Klapperich himself, consists of considerable extracts from speeches by Chatham, Burke, Pitt, Sheridan, Fox, Macaulay, Bright, and Chamberlain; with a good introductory description of the Constitution, the functions of Parliament, the Houses, &c., short biographies of the orators represented, and full and accurate notes in English. There are three illustrations showing the Houses outside and inside. (2) Band XXXIX., *Heroes of Britain*, also edited by Dr. Klapperich, contains concise biographies of Drake, Newton, Marlborough, Wolfe, Clive, Hastings, Cook, Nelson, Wellington, Stephenson, Faraday, Livingstone, Gordon, "deren Taten geeignet sind, die Jugend zur Nacheiferung anzufeuern." The sketches are chosen from the writings of various British authors. The notes are in German; and there are several "Abbildungen und Kärtchen" by way of illustration. Similar are (3) Band XXXV., *Popular Writers of our Time*, second series (M. 1.40), (4) Band XLI., *Selections from Byron* (M. 1.50), both edited by Dr. Klapperich, and (5) Shakespeare's *Richard II.*, edited by Prof. Dr. H. Fernow (M. 1.80). The series is most thoughtfully and carefully edited, and must powerfully foster the learning of English and of English ways in the schools of Germany.

SHAKESPEARE FOR SCHOOLS.

"The Blackfriars Shakespeare" (Prof. Meiklejohn's Series).—*The Merchant of Venice.* Edited by Francis Storr. (1s. 6d. Meiklejohn & Holden.)

The introduction deals pointedly with the sources, unity, date, and chief characters of the play. The notes are expressly directed to aid the pupil in getting at the meaning, philological inquiries being avoided, and the necessary antiquarian investigation being reduced to a minimum. At the same time the editor most properly indicates "that this verbal study is merely preliminary, a clearing of the way to the comprehension of the play as a whole, as a masterpiece of dramatic art—in a word, to make the pupil relish Shakespeare." The concise introductory summaries of the scenes are instructive and suggestive for the main purpose. Useful appendixes on prosody, grammar, &c., and some examination papers, supply a reasonable demand of the schools. The edition is distinctively marked out from the general run of commentaries by judicious selection of points and by bright and incisive treatment. It exemplifies the kind of handling that will "make the pupil relish Shakespeare," and it could have no higher recommendation.

"Blackwoods' School Shakespeare." Edited by R. Brimley Johnson.—*Twelfth Night.* Edited by Fanny Johnson, formerly Head Mistress of Bolton High School. (1s.)

Here again the aim is "to interpret the play without indulging in elaborate literary criticism or trespassing on the domains of pure philology." The introduction sketches the story and sources of the play, with brief and pointed handling of its literary, dramatic, and moral characteristics. The notes explain difficult passages, peculiarities, and allusions, in subordination to the main purpose of rendering the text clear and interesting. A full glossary is appended. The type is clear, and the binding substantial. A sufficient and serviceable edition.

"The Picture Shakespeare."—(1) *Twelfth Night.* (2) *A Midsummer Night's Dream.* (3) *King Henry the Eighth.* (1s. each. Blackie.)

The illustrations, which give name to the series, are numerous and good, supplying a distinctive element of interest. The introduction is limited to an outline of the story of each play, but it is effectively supplemented by an appendix dealing with the date of the play, the sources of the plot and characters, and general points of criticism. The notes, which are concise, suffice for all reasonable requirements. Both notes and appendixes are substantially those of "The Junior School Shakespeare" published by the same firm. The volumes are specially tested by practical teachers before publication, "in order to secure entire suitability for class use." The type is liberal. The series is handy, attractive, and serviceable.

"The Swan Edition of Shakespeare's Plays."—(1) *Twelfth Night.* Edited by Alfred L. Cann, B.A., Principal of the P.-T. Centre, Bolton, with 10 full-page Illustrations by Grenville Manton. (2) *Much Ado about Nothing.* Edited by Robert Williamson, M.A., Principal of the Staffordshire Potteries P.-T. Centre, Hanley, with 12 full-page Illustrations by H. R. Millar. (3) *The Winter's Tale.* Edited by T. Geo. Wright, Inspector of Schools, Bristol, with 10 full-page Illustrations by R. Wheelwright. (4) *King Lear.* Edited by A. V. Houghton, with 10 full-page illustrations by Gordon Browne. (5) *A Midsummer Night's Dream.* Edited by J. W. Iliffe, Principal, Central Secondary School, Sheffield, with 10 full-page illustrations by C. A. Shepperson. (1s. each. Longmans.)

The introduction gives a brief life of the poet, and sketches the story of the play, with remarks on main points of language, grammar, and versification. The notes are concise and limited to points that really need explanation. Some examination papers are appended. The volumes are beautifully printed and artistically got up. A very attractive and agreeable series.

MODERN LANGUAGES.

Grammaire Française à l'usage des Anglais. Par E. Renault, Officier d'Académie, Assistant Lecturer at the University of Liverpool. (4s. 6d. Edward Arnold.)

M. Renault presents a systematic grammar in French, directing special attention to the peculiar difficulties of the English student: "Notre but a été de fournir l'explication de toutes les difficultés grammaticales qu'un Anglais peut recontrer au cours de ses études." At the end of almost all the chapters the Anglicisms and the Gallicisms connected with their different subjects are gathered together in contrast. A preliminary chapter is devoted to phonetics, and accidence and syntax are worked together throughout the volume. The illustrative examples are very carefully selected; indeed, they may be regarded as one of the most noteworthy features of the work. Except in the translation of examples, French is used everywhere. Indexes are appended. The work is very fresh and instructive, careful and capable.

"Methuen's Simplified French Texts." Edited by T. R. N. Crofts, M.A., Modern Language Master at Merchant Taylors' School. (1s. each.)

The aim of this new series is "to supply for young pupils who have been learning the language for about a year or eighteen months a simple translation book which they can understand, and which will at the same time provide a complete story in place of a succession of little anecdotes." To obtain the necessary simplicity the editors resort to adaptation. There are no formal notes, but each volume has a vocabulary, in which difficulties of idiom are noted. The first issues are: (1) *Abdallah, ou Le Trèfle à quatre Feuilles*—conte arabe, par Edouard Laboulaye—adapted by J. A. Wilson; (2) *La Chanson de Roland*, adapted by H. Rieu, M.A. Cantab., Modern Language Master at Merchant Taylors'; and (3) *Mémoires de Cadichon* (founded on "Mémoires d'un Ane," by Madame de Ségur), adapted by J. F.

Rhoades, Assistant Master at Fettes College. The volumes are well printed and tastefully got up. The series will be attractive and most useful.

Messrs. Ginn have added to their excellent "International Modern Language Series": (1) *Am Deutschen Herde*—ein Buch über deutsche Sitte und Sprache—von Oskar und Valerie Thiergen, edited by Starr Willard Cutting, Professor of German Literature in the University of Chicago (2s. 6d.); (2) *Deutsche Liebe*—aus den Papieren eines Fremdlings herausgegeben und mit einem Vorwort begleitet von F. Max Müller—edited by James Chapman Johnston, Teacher of German and English in the High School, Harrisonburg, Virginia (2s.); (3) *Höher als die Kirche*, von Wilhelmine v. Hillern, edited by Clarence Willis Eastman, Ph.D., Assistant Professor of German, State University of Iowa (1s. 6d.); (4) *Die Vierzehen Nothelfer* (Riehl), edited by J. F. Louis Raschen, Assistant Professor of Modern Languages in Lafayette College (1s.); (5) *Gravelotte* (Frenssen)—chapter xiv. of "Jörn Uhl"—edited by Otto Heller, Ph.D., Professor of the German Language and Literature in Washington University, St. Louis (1s.); and (6) *Heine's Poems*, selected and edited by Carl Edgar Eggert, Instructor in German in the University of Michigan (2s. 6d.). The notes are generally judicious, and the vocabulary of each volume is full and helpful. (3) and (4) also provide some exercises for composition and conversation. All the volumes are well printed and agreeably got up.

New volumes of the admirable "Oxford Higher French Series," edited by Leon Delbos, M.A. (Clarendon Press), are: (1) *Choix de Lettres Parisiennes* (Madame de Girardin), edited by F. de Baudiss, Senior Modern Language Master, University College (London) School (2s. 6d. net); (2) *Pierrette* (Balzac), edited by Theodora de Sélincourt, of Somerville College, Oxford (2s. 6d. net); (3) *Hernani* (Hugo), edited by C. Kemshead, B.A., Lecturer in Modern Languages, Magdalen College, Oxford (2s. net); (4) *Racine et Shakespeare* (Stendhal), edited by Leon Delbos, M.A. (3s. net); and (5) *Poésies Choisies* (Alfred de Musset), edited by C. Edmund Delbos, Modern Language Master, Upper Canada School, Toronto, late of Loretto School (2s. net). The notes are mostly brief and pointed; and a useful bibliography is appended to each volume. An attractive and welcome series.

HISTORY.

English Historians. With an Introduction. By A. J. Grant, Professor of History, Leeds University. (2s. 6d. Blackie. Warwick Library of English Literature.)

Prof. Grant, in spite of obvious and serious difficulties, has succeeded in producing, within the limits of the series, a very useful and suggestive contribution to the history of historiography in England. The introductory review of English historical writing, especially from about the middle of the eighteenth century onwards, is an extremely lucid sketch, with unobtrusive and shrewd incidental criticisms. Part I. contains thirteen passages, from Bacon to Bury, chosen to illustrate the view taken by historians at different periods of the objects and methods of history. Part II. consists of thirteen extracts from eight writers or works, illustrating the method and style adopted by historians at different periods, from the Anglo-Saxon Chronicle to Gardiner. The work is most instructive; it is thoughtfully planned and judiciously compiled; and it ought to be in the hands of all the students of history in fairly advanced stages.

The World of To-day: A Survey of the Lands and Peoples of the Globe as seen in Travel and Commerce. By A. R. Hope Moncrieff. Vols. V. and VI. (8s. net each. Gresham Publishing Company.)

The work is now complete in six volumes. Vol. V. is devoted to South America; Vol. VI. surveys North America and Europe. Each volume is very liberally provided with coloured plates, maps, and text illustrations, and the frontispiece to each exhibits portraits of nine distinguished explorers. Mr. Moncrieff writes with ample knowledge, in easy and vivid style, and with a keen and steady eye to the salient points. The publishers, besides supplying abundant and pertinent illustrations, have added greatly to the practical utility of the work by giving to each volume an extensive and elaborate appendix of "geographical and commercial survey." Both author and publishers are to be heartily congratulated on the completion of a most able, handsome, and useful work.

"Heroes of the Nations."—*George Washington: Patriot, Soldier, Statesman, First President of the United States.* By James A. Harrison, Professor in the University of Virginia. (5s. Putnam.)

There can be no question that Washington should figure in a series of "Heroes of the Nations"; on the contrary, it is surprising that in such a series proceeding from America he should not have been assigned the very first place. It is appropriate that the biography should be written by a Virginian Professor, and it is natural that a Virginian Professor should be enthusiastic over a Virginian Hero. We do not find the least fault with Prof. Harrison's enthusiasm, but we cannot believe that the form of its expression is altogether prudent. A severely historical treatment would, we imagine, have served his purpose more effectively. He gives fanciful headings to his chapters, and rises almost to the height of dithyramb in his appreciations. The artistic form is also somewhat marred by frequent, and sometimes long, quotations; but probably the vividness gained is an adequate compensation. It does seem a little absurd, however, to occupy two or three pages of a small volume with the detail of an order for household furnishings from London on occasion of Washington's setting up house—that is, at "the Golden Milestone" in "Arcady." For all that, the volume is written on adequate knowledge and in fluent, if rather florid, style, and it conveys a well defined impression of Washington in all the relations of his life and work. There are thirty-two illustrations, mostly good, and all of them interesting.

Aus deutscher Wissenschaft und Kunst.—*Zur Geschichte:* Proben von Darstellungen aus der deutschen Geschichte für Schule und Haus ausgewählt und erläutert. Von Dr. Willy Scheel, Oberlehrer am Gymnasium zu Steglitz. (M. 1.20 geb. Teubner.)

The volume consists of 15 extracts from 15 German historians on 15 periods, episodes, or aspects of German history, from the Kelts and the Germans of the time before Cæsar down to Kaiser Wilhelm I. The writers are all authoritative on their respective subjects—Mommsen, Giesebrecht, Lamprecht, Treitschke, Ranke, Droysen, &c.; and brief biographical notices of them are appended. There is also a suggestive appendix "Zur Entwicklung der neueren deutschen Geschichtschreibung." The volume should prove welcome for class or collateral reading in German, and its subjects of large historical interest appeal also to the general reader. "Er soll dem reiferen Schüler eine Anleitung sein, historische Werke mit Verständnis zu lesen und zu beurteilen, sich ihrer kunstvollen Darstellung bewuszt zu werden und dadurch den Schriftsteller als Ganzes zu erfassen." An excellent collection.

Messrs. Macmillan publish Green's *Short History of the English People* in three Parts (3s. each). Part I. comes down to 1422; Part II. carries the story to 1660; and Part III. ends in 1874. Each volume is provided with its own Chronological Annals, Genealogical Tables, Maps, and Index. The separate parts will be very handy and welcome.

YEAR-BOOKS.

The Public Schools Yearbook (3s. 6d. net, Swan Sonnenschein), now in its eighteenth year, presents fully its usual quantity of carefully selected information on all matters most likely to engage the interest of parents, teachers, and boys. Besides comprehensive and concise accounts of the "Public Schools," extending to nearly 350 pages, there are 17 chapters, occupying almost equal space, and dealing with the conditions and prospects of various professional careers or other closely allied educational subjects. The volume will be especially useful to parents, and particularly to such as do not happen to be able to avail themselves of personal advice or recommendation on the choice of a school.

The Englishwoman's Year-Book and Directory (2s. 6d. net, A. & C Black), edited by Emily Janes, Organizing Secretary to the National Union of Women Workers of Great Britain and Ireland, now in its twenty-seventh year, amply maintains its reputation as a full and trustworthy record of the multiform activities of women in professions, trades, handicrafts, pastimes, and philanthropic work. Education is placed in the foreground; but, whatever sort of active interest any woman may have, she can hardly fail to find guidance here. A most industrious and serviceable compilation.

The Writers' and Artists' Year-Book (1s. net, A. & C. Black) contains the usual lists of papers and magazines with informatory details, of publishers—American publishers as a separate group—colour-printers and the like, literary agents, &c. A very useful and handy book of reference.

The Scientist's Pocket Book and Diary (1s. or 6d., according to binding: Woolley, Manchester) consists of a varied selection of useful information in brief paragraphs, mostly scientific in subject, followed by a diary, a week on a page. The form is handy and the get-up is agreeable.

MISCELLANEOUS.

Impressions of a Wanderer, by M. C. Mallik, of the Middle Temple Barrister-at-Law (5s. net, Fisher Unwin), after introductory chapters on the advantages and conditions of travel, language, currency, and physical and moral features, offers a detailed description of Norway and Japan, with glances at "the Near East and the Middle West." Norway and the Norwegians evoke Mr. Mallik's highest admiration. The writer has travelled with his eyes open and his critical observation alert, and he is especially interested in the human and moral aspects. The volume will be a suggestive companion to, or even substitute for, the ordinary guide-book to the places described.

Peers or People?—"the House of Lords weighed in the balance, and found wanting—an appeal to history"—by William T. Stead (Fisher Unwin), is an extension of the pamphlet "Fifty Years of the House of Lords" published by the author a quarter of a century ago. Mr. Stead states the present issue, considers "what a second chamber

should be" and "what the House of Lords is," relates in some detail "what the House of Lords has done," and finally speculates on the question "What must we do with the House of Lords?" He would begin by using the Royal Prerogative, first to cancel the Writs of Summons now in the possession of some three or four hundred hereditary legislators, and then for the creation of the requisite number of life peers to assure the preponderance of the House of Commons. If it be objected that the motion passed by the House of Lords in 1856 against the creation of life peers stands in the way, he pronounces that motion to be "unconstitutional, illegal, and contrary to well established precedents." Then, if necessary, he would tax the peers to the tune of £400 a year apiece—the basis of the calculation being the million sterling in every five years that a General Election costs. The Prime Minister's views we now know are more limited, and very different. Anyhow, Mr. Stead writes with great zest and vigour.

Organized Games "for the School, the Hall, or the Playground," by Frank Elston (3s. net, E. J. Arnold), 32 in number, suitable for children up to fourteen, are intended "not so much as a perfect system of controlled play, but as suggestive of a new and rational method of physical development in a pleasant form, and at the same time as a relaxation from the cast-iron precision of the usual physical exercises." The devices are ingenious and attractive, and the exercises are in accord with the suggestions of the Inter-Departmental Committee on the Model Course of Physical Exercises. The collection will, no doubt, prove very popular.

[The author of "School and Garden" (Cassell) is Mr. W. P. Wright—not Knight (as accidentally given in our notice last month).]

FIRST GLANCES.

Mathematics.

Algebra, Elementary. By P. Ross, M.A., B.Sc., Head Mathematical Master of Broughton Pupil-Teacher Institute and Higher-Grade School, Edinburgh. Part I. 3s.; without Answers, 2s. 6d. Longmans.

["For the use of higher grade and secondary schools." "My aim has been to produce a text-book from which a student of average ability could understand the principles of algebra for himself, if necessary." Abundant examples; answers.]

Annals of Mathematics, January, 1907. Longmans (for Harvard University).

Arithmetic, A Heuristic. By Clifford Granville, B.A. Dunelm., and C. E. Rice, M.A. Cantab.; both of West Heath School, Hampstead. Part I.: Method. 2s. 6d. Horace Marshall.

[Main object is "to suggest and present a natural order of mathematical conception in arithmetic." Examples and answers.]

Arithmetic for the Preliminary Certificate Examination. By R. H. Chope, B.A., of Kingswood School, Bath. 2s. 6d. Clive.

[Adapted from "The Tutorial Arithmetic." Numerous examples, with answers. Excellent.]

Arithmetic, Clive's New Shilling. Edited by William Briggs, LL.D., M.A., B.Sc., F.R.A.S., Principal of University Correspondence College. Clive.

[Clear and practical. Examples plentiful and good. Examination papers (twenty-six) appended.]

Arithmetical Exercises for Junior Forms. By R. B. Morgan, B.Litt., Whitgift School, Croydon. Book I. 1s. Black.

[Varied; graduated. Answers. Very useful.]

Calculus, First Steps in the. By A. F. van der Heyden, M.A., Fellow of the University of Durham and Mathematical Master at the Middlesbrough High School. 3s. Edward Arnold.

[Provides for Stage Five of the Board of Education Syllabus for Mathematics; and "suitable for an ordinary class in a secondary day school." Examples, with answers.]

Drawing, Mathematical. By G. M. Minchin, M.A., F.R.S., Professor of Applied Mathematics at the Royal Engineering College, Coopers Hill, and J. B. Dale, M.A., Assistant Professor of Mathematics at King's College, London. 7s. 6d. net. Edward Arnold.

[Brief connected account of the theory; numerous typical cases illustrated. 102 figures.]

Modern Language Series—French.

Arnold's Lectures Françaises. Books I. and II., arranged and in part written by Jetta S. Wolff; Book III., compiled and edited by Maurice A. Gerothwohl, D.Litt., Honours Lecturer in French and Examiner in the School of Modern Literature to Trinity College, University of Dublin. 1s. 3d., 1s. 6d., 1s. 6d. Edward Arnold.

[Books I. and II. offer "aux enfants d'Outre-Manche" "des aperçus de la vie et de la littérature actuelles de leur petits voisins français." Modern and varied in matter and in form; *questionnaire; vocabulaire.* Book III. gives choice extracts in prose and verse, suitable to middle and upper secondary forms; brief notes; *glossaire.* Book IV. will complete the series. Illustrations. Excellent course of reading.]

Blackie's Modern Language Series.—La Jeunesse de Pierrot (Dumas). Edited by Louis A. Barbé, of Glasgow Academy. 1s. 6d.

[Notes adequate; vocabulary full. Good edition.]

Cours Elémentaire Black.—La Première Année de Français—Première Partie (F. B. Kirkman). Phonetically transcribed by D. L. Savory, B.A. Oxon., Lecturer at the University of London, Goldsmiths' College. 6d. A. & C. Black.

Ginn's International Modern Language Series. (1) One Hundred Fables by La Fontaine. Edited, with Introduction, Notes, and Vocabulary, by O. B. Super, Ph.D., Professor of Romance Languages in Dickenson College. 2s. (2) Le Monde où l'on s'ennuie (Pailleron). Edited, with Introduction, Notes, Vocabulary, French Questions, and English Exercises, by William Raleigh Price, A.B., Head Teacher of Modern Languages, East High School, Rochester, N.Y. 2s. (3) La Fée des Grèves (Féval)—abridged edition, with Introduction, Notes, and Vocabulary, by Gilbert H. C. Hawtrey, M.A., Assistant Master in Modern Languages, St. Paul's School, Concord, N.H. 3s.

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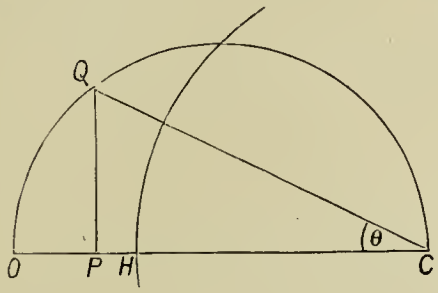
MATHEMATICS.

16075. (W. J. Dobbs, M.A.)—If we neglect the resistance of the atmosphere, a small body, placed initially at rest relatively to the Earth at a height of 500 miles above its surface, would fall to the ground in about $7\frac{1}{2}$ minutes. Find how far the body falls and the velocity it acquires in the first 5 minutes.

Solution by the Proposer.



Let C be the centre of the Earth, O the point from which the body is let fall, H the point where it strikes the Earth's surface. Let R denote the radius of the Earth and h the distance OH, both in miles, and let v ml./sec. be the velocity at P after falling x miles. The acceleration due to gravity on the Earth's surface may be taken as

$$32{\cdot}2 \text{ ft./sec.}^2 = 0{\cdot}00610 \text{ ml./sec.}^2 = g \text{ (say)}.$$

The acceleration at P is $gR^2/(R+h-x)^2$. Hence

$$v\,dv/dx = gR^2/(R+h-x)^2.$$

Integrating this equation, we have

$$v^2 = 2gR^2x/[(R+h)(R+h-x)].$$

Taking R as 4000 miles, so that $R = 8h$, we have

$$v = \tfrac{4}{3}\sqrt{[gR\,(x/h)/(9-x/h)]}\,;$$

i.e.,
$$dx/dt = v = 6{\cdot}60\sqrt{[(x/h)/(9-x/h)]}.$$

For the purpose of integrating this equation, draw PQ, the ordinate of the semi-circle on OC as diameter, and let $\angle OCQ = \theta$. Then $x = (R+h)\sin^2\theta$; so that $x/h = 9\sin^2\theta$, whence $18h\cos^2\theta\,d\theta = 6{\cdot}60\,dt$;

so that
$$t = \frac{9h}{6{\cdot}60}(\theta + \sin\theta\cos\theta)$$
$$= \frac{h}{6{\cdot}60}\left[9\sin^{-1}\tfrac{1}{3}\sqrt{\frac{x}{h}} + \sqrt{\left\{\left(9-\frac{x}{h}\right)\frac{x}{h}\right\}}\right]$$
$$= 75{\cdot}8\left[9\sin^{-1}\tfrac{1}{3}\sqrt{\frac{x}{500}} + \sqrt{\left\{\left(9-\frac{x}{500}\right)\frac{x}{500}\right\}}\right].$$

From this we obtain the following values :—

x	150	200	250	300	miles
t	248	286	319	349	sec.

and, by means of a graph, $x = 220$ when $t = 300$. Also, substituting 220 for x in the formula

$$v = 6{\cdot}60\sqrt{\left\{\frac{x}{500}\Big/\left(9-\frac{x}{500}\right)\right\}},$$

we have
$$v = 1{\cdot}49 \text{ ml./sec.}$$

16096. (T. Stuart, D.Sc.)—Find integral values of x and y satisfying the equations (i.) $2x^4 - y^2 = 256999$, (ii.) $2x^2 - y^4 = 356962$.

Solution by Lt.-Col. Allan Cunningham, R.E.

i.) $N_1 = 256999 = 233\,.\,1103 = (19^2 - 2\,.\,8^2)(41^2 - 2\,.\,17^2)$
$= (19\,.\,41 \mp 16\,.\,17)^2 - 2\,(19\,.\,17 \mp 8\,.\,41)^2 = 507^2 - 2\,.\,5^2 = \ldots$.

Also $7^2 - 2\,.\,5^2 = -1$; therefore

$N_1 = -(507^2 - 2\,.\,5^2)(7^2 - 2\,.\,5^2) = -[(507\,.\,7 \mp 2\,.\,5\,.\,5)^2 - 2\,(507\,.\,5 \mp 5\,.\,7)^2]$
$= -(3499^2 - 2\,.\,2500)\ldots$;

therefore
$$N_1 = 2\,.\,50^4 - 3499^2.$$

(ii.)
$$N_2 = 356962 = 2\,.\,178481 = 2\,.\,p.$$

Here
$$178481 = 391^2 + 160^2 = 57^2 + 2\,.\,296^2.$$

From these data p can be expressed in the form $p = e^2 - 2f^2$ or $2f'^2 - e'^2$ by a method fully explained in the writer's paper on "Connexion of Quadratic Forms" in *Proc. Lond. Math. Soc.*, Vol. xxviii., pp. 302 *et seq.* Thereby $p = 2\,.\,305^2 - 87^2$, whence

$$N_2 = 2p = 610^2 - 2\,.\,87^2.$$

Hence $N_2 = -(610^2 - 2\,.\,87^2)(1^2 - 2\,.\,1^2) = (610 \mp 2\,.\,87)^2 - 2\,(610 \mp 87)^2$
$= -(784^2 - 2\,.\,697^2)$,

whence
$$N_2 = 2\,.\,697^2 - 28^4.$$

16103. (R. F. Scott, M.A.)—Normals PL, PM, PN are drawn to a parabola, focus S. Prove that the diameter of the circle circumscribing the triangle formed by the tangents to the parabola at the points L, M, N is equal to SP.

Analytical Solution by A. M. Nesbitt, M.A.

The tangents at L, M, N being denoted by $y = x/l + al$, ..., those at M, N will intersect in amn, $a\,(m+n)$. Calling this point A, we shall at once have for the length of BC $a\,(m-n)\sqrt{(1+l^2)}$, while

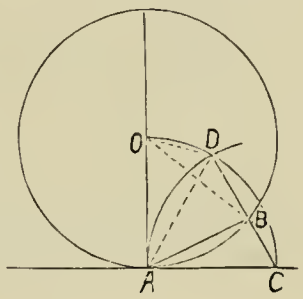
$$\tan BAC = (m \sim n)/(1+mn)\,;$$

so that
$$\sin^2 A = (m-n)/\sqrt{[(1+m^2)(1+n^2)]}.$$

Thus diameter of circum-circle $= a\sqrt{[(1+l^2)(1+m^2)(1+n^2)]}$, and this, as l, m, n satisfy $am^3 + (2a-x)\,m - y = 0$ (in which x, y are co-ordinates of P), reduces at once to $\sqrt{[y^2 + (2a-x)^2 - 2a\,(2a-x) + a^2]}$, *i.e.*, to $\sqrt{[y^2 + (a-x)^2]}$; which proves the theorem.

To inscribe a Regular Heptagon in a given Circle, centre O, radius = r.

By Lindley Latham.



Draw a diameter, and through one extremity A draw a line AC perpendicular to it. With centre A and radius AO, describe an arc ODC, cutting AC in C. With centre C and same radius, describe another arc, cutting the first in D. Join CD, and let CD cut the given circle in B. AB will be one side of the inscribed heptagon. Join OB, OD, and AD. Then

$$AC = CD = AD = AO = OB = r.$$

ACD is an equilateral triangle : therefore

$$\angle CAD = \angle ADC = 60°.$$

Also
$$\angle DAO = \angle CAO - \angle CAD = 90° - 60° = 30°.$$

Since AO = AD, $\angle AOD = \angle ADO$; therefore

$$2\angle ADO = 180° - \angle OAD = 180° - 30° = 150°;$$

therefore

$$\angle ADO = 75° \quad\text{and}\quad \angle ODB = \angle ODA + \angle ADB = 75° + 60° = 135°.$$

Now $\frac{1}{2}OD = AD\cos ADO = r\cos 75°$; therefore

$$OD = 2r\cos 75° = 2r\,[(\sqrt{3}-1)/(2\sqrt{2})] = [(\sqrt{3}-1)/\sqrt{2}]\,r.$$

In the triangle OBD, $OB = r$, $OD = [(\sqrt{3}-1)/\sqrt{2}]\,r$, $\angle ODB = 135°$; $\sin OBD/OD = \sin ODB/OB$; therefore

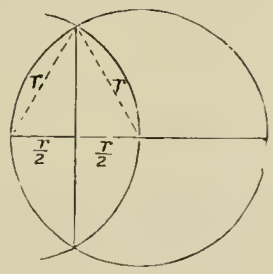
$$\sin OBD = (\sin ODB/OB)\,OD = (1/\sqrt{2})\,[(\sqrt{3}-1)/\sqrt{2}]\,r\,(1/r)$$
$$= \tfrac{1}{2}(\sqrt{3}-1) = \tfrac{1}{2}(1{\cdot}7320508 - 1)$$
$$= {\cdot}3660254 = \sin 21°\,28'\,14{\cdot}52'' \text{ or } \sin 158°\,31'\,45{\cdot}48''\,;$$

but $158°\,31'\,45{\cdot}48'' + 135° > 180°$; therefore the value $158°\,31'\,45{\cdot}48''$ is inadmissible; therefore $\angle OBD = 21°\,28'\,14{\cdot}52''$.

$$\angle DOB = 180° - (\angle ODB + \angle OBD) = 180° - (135° + 21°\,28'\,14{\cdot}52'')$$
$$= 180° - 156°\,28'\,14{\cdot}52'' = 23°\,31'\,45{\cdot}48''.$$

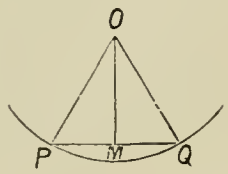
Now $\angle AOB = \angle AOD - \angle DOB = 75° - 23°\,31'\,45{\cdot}48'' = 51°\,28'\,14{\cdot}52''$ or $2'\,31{\cdot}7''$ larger than the true angle at the centre.

$$[\tfrac{1}{7}(360°) = 51°\,25'\,42{\cdot}86'']\,.$$



The above method therefore gives a result closer to the truth than the method of inscribing a regular heptagon in a given circle, by making its side equal to half that of the inscribed equilateral triangle; or, which is the same thing, equal to the median of an equilateral triangle having its sides equal to the radius of the circle; that is to say, equal to

$$\sqrt{[r^2 - (\tfrac{1}{2}r)^2]} = \sqrt{\tfrac{1}{4}(4r^2 - r^2)} = \tfrac{1}{2}\sqrt{3}\,r.$$



For let POQ be an isosceles triangle obtained by joining the ends of one side PQ of the heptagon inscribed by this method to the centre of the circle O, and let OM be drawn perpendicular to PQ.

Then $PM = \frac{1}{2}PQ = \frac{1}{2}\cdot\frac{1}{2}\sqrt{3}\,r = \frac{1}{4}\sqrt{3}\,r$,

and, if $\angle POQ = \theta$, $\angle POM = \frac{1}{2}\theta$.

Now $\sin\frac{1}{2}\theta = MP/OP = \frac{1}{4}\sqrt{3}\,r\,(1/r) = \frac{1}{4}\sqrt{3}$
$= \frac{1}{4}(1{\cdot}7320508) = {\cdot}4330127 = \sin 25°\,39'\,32{\cdot}06''$;

therefore
$$\tfrac{1}{2}\theta = 25°\,39'\,32{\cdot}06''\,;$$

therefore
$$\theta = 51°\,19'\,4{\cdot}12''$$

or $6'\,38{\cdot}74''$ smaller than the true angle at the centre.

[*Note.*—The above piece of work reaches us through the author's father, from whom we learn that it is the investigation of a lad of fourteen. This gives it a special interest.—Editor.]

16139. (M. V. Arunachalan, M.A.)—If in the expression $\dfrac{1}{1-x+x^2}$ the sum of the even terms be $\phi(x)$ and the sum of the odd terms be $\psi(x)$, then $[\phi(x)]^2 - [\psi(x)]^2 = \phi(-x^2) + \psi(-x^2)$.

[*Note.*—The Solver has anticipated the changes in the Question

asked for by the Proposer, viz., of "expression" into *expansion of*, and of "terms" into *power terms*.—Ed.]

Solution by W. Telfer.

Suppose $\dfrac{1}{1-x+x^2}$ is capable of expansion in the form

$$A_0 + A_1x + A_2x^2 + \ldots + A_rx^r + \ldots .$$

Obviously $\dfrac{1}{1+x+x^2}$ will equal

$$A_0 - A_1x + A_2x^2 - \ldots + (-1)^r A_rx^r.$$

Thus $2\phi(x) \equiv 2A_0 + 2A_2x^2 + \ldots = \dfrac{1}{1-x+x^2} + \dfrac{1}{1+x+x^2} = \dfrac{2(1+x^2)}{1+x^2+x^4}$,

and $2\psi(x) = 2A_1x + 2A_3x^3 + \ldots = \dfrac{1}{1-x+x^2} - \dfrac{1}{1+x+x^2} = \dfrac{2x}{1+x^2+x^4}$.

But obviously

$$\frac{1}{1+x^2+x^4} = A_0 + A_1(-x^2) + A_2(-x^2)^2 + \ldots = \phi(-x^2) + \psi(-x^2);$$

therefore we have $[\phi(x)]^2 - [\psi(x)]^2 = \phi(-x^2) + \psi(-x^2)$.

16115. (Hon. G. R. Dick.)—Show by pure algebra (without importing any geometrical terms or notions) that the homogeneous equation of the second degree in x, y, z,

$$\begin{vmatrix} x^2, & x_1^2, & x_2^2, & x_3^2, & x_4^2, & a \\ y^2, & y_1^2, & y_2^2, & y_3^2, & y_4^2, & b \\ z^2, & z_1^2, & z_2^2, & z_3^2, & z_4^2, & c \\ yz, & y_1z_1, & y_2z_2, & y_3z_3, & y_4z_4, & f \\ zx, & z_1x_1, & z_2x_2, & z_3x_3, & z_4x_4, & g \\ xy, & x_1y_1, & x_2y_2, & x_3y_3, & x_4y_4, & h \end{vmatrix} = 0$$

wherein x_1, y_1, z_1, ... are given, and a, ..., h arbitrary constants), which appears to involve five arbitrary parameters, in reality involves only one. [The obvious geometrical analogue is:—If four points of a conic are given, one more condition is sufficient to determine the conic completely.]

Solution by Professor Nanson *and* A. M. Nesbitt, M.A.

Let A, B, ... be the co-factors of a, b, ... in the given equation, which is therefore $aA + bB + cC + fF + gG + hH = 0$.

We then have identically

$$(ABCFGH)(x_ry_rz_r)^2 = 0$$

where $r = 1, 2, 3, 4$. From these four equations we can solve linearly for four of the co-factors in terms of another two—say, P, Q—and so express the given equation in the form $pP + qQ = 0$, where p, q are linear in a, b, c, f, g, h. Thus the given equation really involves one parameter only, viz., p/q.

The only case in which the argument used fails is when the 15 four-line determinants formable from the array

$$\begin{matrix} x_1^2, & y_1^2, & z_1^2, & y_1z_1, & z_1x_1, & x_1y_1, \\ x_2^2, & y_2^2, & z_2^2, & y_2z_2, & z_2x_2, & x_2y_2, \\ x_3^2, & y_3^2, & z_3^2, & y_3z_3, & z_3x_3, & x_3y_3, \\ x_4^2, & y_4^2, & z_4^2, & y_4z_4, & z_4x_4, & x_4y_4 \end{matrix}$$

all vanish; and in this case the given equation is identically true.

15790. (Professor Sanjána, M.A.)—Resolve into prime factors (or at least into six factors) the numbers $6^{42}+1$ and $24^{30}+1$.

Solution by Lt.-Col. Allan Cunningham, R.E.

$$\text{(i.)} \quad N = 6^{42}+1 = \left(\frac{6^{42}+1}{6^{14}+1}\ \frac{6^2+1}{6^6+1}\right)\frac{6^{14}+1}{6^2+1}\ \frac{6^6+1}{6^2+1}(6^2+1)$$

$$= (N'_3/N_3)\,N_7N_3N_1 \text{ (suppose)};$$

$$N_1 = 6^2+1 = 37; \quad N_3 = (6^6+1)/(6^2+1) = 13 \,.\, 97:$$

$$N_7 = (6^{14}+1)/(6^2+1) = 421 \,.\, 5030761.$$

The two factors $N'_3 = (6^{42}+1)/(6^{14}+1)$, $N_3 = (6^6+1)/(6^2+1)$ are both of form (styled Sext-Aurifeuillian) $N_{vi} = (Y^6+1)/(Y^2+1)$, where $Y = 6y^2$. All such numbers are (algebraically) resolvable into two factors (say L, M), where

$$N_{vi} = L, M; \quad L = P - Q, \quad M = P + Q; \quad P = 1 + 3Y + Y^2, \quad Q = 6y(1+Y).$$

Taking $Y = 6^7$ gives $y = 6^3$; $N'_3 = [(6^7)^6+1]/[(6^7)^2+1]$,

$$P' = 1 + 3 \,.\, 6^7 + 6^{14} = 78365003905, \quad Q' = 6 \,.\, 6^3(1+6^7) = 362798352,$$

$$L' = 78002205553, \qquad M' = 78727802257;$$

and, since N'_3 is divisible by N_3, it follows that L'_3, M'_3 must be divisible by the factors of N_3. On actual trial it is found that

$$L'_3 = 97 \,.\, 804146449; \quad M'_3 = 13 \,.\, 6055984789.$$

Hence $N'_3/N_3 = \dfrac{36^{21}+1}{36^7+1}\ \dfrac{36+1}{36^3+1}$, the algebraic prime factor of $(36^{21}+1)$.

Now the writer has compiled a table showing the roots of the congruence $(x^7+1)/(x+1) \equiv 0 \pmod{p}$ up to $p \not> 10{,}000$. This table shows that N'_3/N_3 contains no prime factors $< 10{,}000$, and on applying Lawrence's process for the determination of high primes which are factors of (a^n+1) it is found that the two large numbers $L'_3/97$, $M'_3/13$ are both prime. Hence

$$6^{42}+1 = (804146449 \,.\, 6055984789)(421 \,.\, 5030761)(13 \,.\, 97)(37);$$

$$\text{(ii.)} \quad N = 24^{30}+1 = \left(\frac{24^{30}+1}{24^{10}+1}\ \frac{24^2+1}{24^6+1}\right)\frac{24^{10}+1}{24^2+1}\ \frac{24^6+1}{24^2+1}(24^2+1)$$

$$= (N'_3/N_3)\,N_5N_3N_1 \text{ (suppose)},$$

$$N_1 = 24^2+1 = 577; \quad N_3 = (24^6+1)/(24^2+1) = 349\ (13 \,.\, 73);$$

$$N_5 = (24^{10}+1)/(24^2+1) = 61 \,.\, 1801385941.$$

As to N_5, the writer has compiled a table of solutions of the congruence $(y^{10}+1)/(y^2+1) \equiv 0 \pmod{p}$ up to $p \not> 10{,}000$; this shows that 61 is a divisor of N_5, and that there are no more divisors $< 10{,}000$. On applying Lawrence's process for determining the high prime factors of (a^n+1) it is found that the large factor of N_5 is prime.

Next, the two factors

$$N'_3 = (24^{30}+1)/(24^{10}+1), \quad N_3 = (24^6+1)/(24^6+1)$$

are both of form (styled Sext-Aurifeuillian) $N_{vi} = (Y^6+1)/(Y^2+1)$ where $Y = 6y^2$. All such numbers are resolvable into two factors (say L, M) by the formulæ given above under (i.).

Taking $Y = 24 = 6 \,.\, 2^2$ gives $y = 2$, $N_3 = L_3M_3$, where $L_3 = 349$ and $M_3 = 13 \,.\, 73$ (as above).

Taking $Y' = 24^5$ gives $y' = 6^2 \,.\, 2^5$, $N'_3 = L'_3M'_3$,

$$P'_3 = 1 + 3 \,.\, 24^5 + 24^{10} = 63403404853249,$$

$$Q'_3 = 6 \,.\, 6^2 \,.\, 2^5(1+24^5) = \tfrac{1}{2} \,.\, 24^3(1+24^5) = 55037664000,$$

$$L'_3 = 63348367189249, \quad M'_3 = 63458442517249,$$

and, since N'_3 is divisible by N_3, it follows L'_3, M'_3 must be divisible by L_3, M_3 or by M_3, L_3 respectively. On actual trial it is found that

$$L'_3/L_3 = 181513946101, \quad M'_3/M_3 = 66868748701.$$

Now the writer has compiled a table showing the roots of the congruence $(y^{15}+1)(y+1)/(y^5+1)(y^3+1) \equiv 0 \pmod{p}$ up to $p \not> 10{,}000$; this shows that N'_3/N_3 contains no prime factors $< 10{,}000$; but, with the means at present available, it would be very laborious to attempt further resolution of the two large factors L'_3/L_3, M'_3/M_3. Thus, finally, N has been resolved into 8 factors of which 6 are prime.

The following discussion of the Question is due to Mr. A. H. Bell:—

Firstly, $6^{42}+1 = (x^2+1)(x^{12}-x^{10}+x^8-x^6+x^4-x^2+1)$
$\times [(x^{14}+3x^7+1)+x^4(x^7+1)][(x^{14}+3x^7+1)-x^4(x^7+1)]$,

in which $6 = x$ and x^4 is derived from $6x^7 = x^8$.

Again, $24^{30}+1 = (x^2+1)(x^8-x^6+x^4-x^2+1)$
$\times [(x^{10}+3x^5+1)+12x^2(x^5+1)][(x^{10}+3x^5+1)-12x^2(x^5+1)]$.

In this case $24 = x$ and $(12x^2)^2 = 6x^5$. $N^{6n}+1 = (x^{2n}+1)(x^{4n}-x^{2n}+1)$. From this last general factor, two can be found when $6x^n$ is a square in $(x^{2n}+3x^n+1)^2 - 6x^n(x^n+1)^2$. [For this latter transformation we are indebted to the Proposer.]

16119. (R. F. Davis, M.A.)—Eliminate λ, κ from the three equations $(\lambda^2+1)x - \lambda\kappa = a$, $(\lambda^2+1)y + \kappa = \lambda^2 a$, $(\lambda^2+1)(x^2+y^2) = \kappa^2$ (i., ii., iii.).

Solutions by (I.) Professor Sanjána, M.A.; (II.) *by* C. M. Ross.

(I.) From (i.) $x = (a+\lambda\kappa)/(\lambda^2+1)$, from (ii.) $y = (\lambda^2 a - \kappa)/(\lambda^2+1)$; hence, from (iii.), $\kappa^2/(\lambda^2+1) = [(a+\lambda\kappa)^2 + (\lambda^2 a - \kappa)^2]/(\lambda^2+1)^2$;

i.e., $\kappa^2(\lambda^2+1) = (a+\lambda\kappa)^2 + (\lambda^2 a - \kappa)^2$

whence $\kappa = a(\lambda^4+1)/2(\lambda^2-\lambda)$.

Hence $x(\lambda^2+1) = a + a(\lambda^4+1)/2(\lambda-1)$

and $y(\lambda^2+1) = \lambda^2 a - a(\lambda^4+1)/2(\lambda^2-\lambda)$;

these give $a\lambda^4 - 2\lambda^3 x + 2\lambda^2 x + 2\lambda(a-x) + (2x-a) = 0$

and $(2y-a)\lambda^4 + 2\lambda^3(a-y) + 2\lambda^2 y - 2\lambda y + a = 0$.

From these two equations the eliminant may be found by Sylvester's or Bezout's method. [Rest in *Reprint*.]

16089. (H. L. Trachtenberg, B.A.)—The common points of two conics are on a circle. Prove that the circle on the line joining the points of contact of a common tangent of the conics as diameter cuts this circle orthogonally.

Solutions (I.) *by* R. F. Davis, M.A., *and others*; (II.) *by* W. F. Beard, M.A.

(I.) Take the common tangent as axis of x and a perpendicular through its middle point O as the axis of y. Then the equations of

the two conics are

$$S \equiv (x-a)^2+2hxy+by^2+2fy=0, \quad S' \equiv (x+a)^2+2h'xy+b'y^2+2f'y=0$$

where $2a$ is the length of the common tangent.

Now, every conic through the four points of intersection is of the form $S+\lambda S'=0$. By hypothesis, one such conic is a circle: hence it must be possible to determine λ so that the coefficient of xy vanishes at the same time as the coefficients of x^2 and y^2 are equal. The circle must therefore be

$$h'[(x-a)^2+2hxy+by^2+2fy] = h[(x+a)^2+2h'xy+b'y^2+2f'y],$$

with the condition $h'-h = h'b-hb'$. Thus the equation of the circle becomes $x^2+y^2+a^2+$ terms in x, $y=0$ and the tangent to it from $O=a$.

(II.) Let $u\alpha^2+v\beta^2+w\gamma^2=0, \quad u'\alpha^2+v'\beta^2+w'\gamma^2=0$ ..... (1, 2)

be the equations of two conics touching $l\alpha \pm m\beta \pm n\gamma = 0$. Then

$$\Sigma\, l^2/u = 0, \quad \Sigma\, l^2/u_1 = 0 \text{ ..... } (3).$$

It is easy to find that the points of contact with $l\alpha+m\beta+n\gamma=0$ are l/u, m/v, n/w; l/u', m/v', n/w'. Any conic through the intersection of (1) and (2) is

$$(u+\kappa u')\alpha^2+\ldots = 0 \text{ ..... } (4).$$

If this is a circle, it must be the same as

$$a\beta\gamma+\ldots+(\lambda\alpha+\mu\beta+\nu\gamma)(a\alpha+b\beta+c\gamma) = 0;$$

therefore $b\nu+c\mu+a=0, \ldots$ or $\mu/b+\nu/c = -a/bc, \ldots,$

from which

$$2\lambda/a = a/bc-b/ca-c/ab = (a^2-b^2-c^2)/abc = -2\cos A/a;$$

therefore $\lambda = -\cos A$, and the equation of the circle is

$$\Sigma\, a\cos A\alpha^2 = 0 \text{ ..... } (5).$$

Also, by comparing with (4), $(u+\kappa u')/a\cos A = (v+\kappa v')/b\cos B \ldots,$ and, from (3), $[l^2(u+\kappa u')]/uu'+[m^2(v+\kappa v')]/vv'+\ldots = 0$;

hence

$$\Sigma\, a\cos A\, l^2/uu' = 0 \text{ ..... } (6).$$

Now the circle on l/u, m/v, n/w; l/u', ... as diameter cuts (5) orthogonally if the polar of one of the points with respect to (5) passes through the other point. The polar of l/u, ... is $l/u\, a\cos A\alpha+\ldots = 0$, and this passes through l/u', ... if $\Sigma(l^2/uu')\, a\cos A = 0$, which is true from (6).

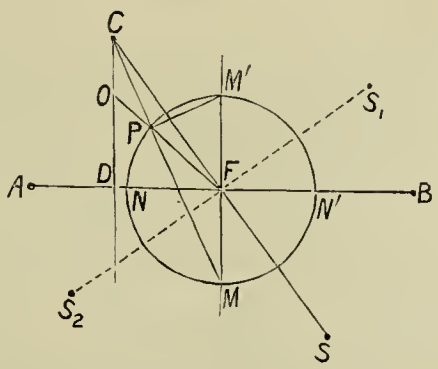
The Proposer and Mr. H. Riddell, M.E., solve the problem as follows:—

Let the circle through the common points of the conics be S_1, and that on T_1T_2 as diameter, S_2; T_1, T_2 being the points of contact of the common tangent. Let T_1T_2 cut S_1 in BC. Then, since the two conics and S_1 have four common points, T_1T_2 cuts them in involution; therefore T_1, T_2 are the double points of this involution, and, if O is the mid-point of T_1T_2, $OB.OC = OT_1^2$. Thus B and C are inverse points with regard to S_2. Thus S_1, since it passes through them, cuts S_2 orthogonally.

16121. (Professor Neuberg.)—On considère les hyperboles équilatères qui passent par deux points fixes A, B et dont un axe de symétrie passe par un point donné C. Trouver le lieu des centres.

Solutions (I.) *by* C. E. Youngman, M.A.; (II.) *by* C. M. Ross.

(I.) Take F the mid-point of AB, and draw FM and CD perpendicular to AB. Let P be one of the centres, and PN, PN′ the corresponding asymptotes, cutting AB at N, N′; then AN = BN′; therefore FN = FN′, and F is the centre of the circle PNN′. Draw this circle, cutting FM at M and M′; then PM, PM′ are the axes of the hyperbola, and one of them, say PM, is to go through C. Let FP meet CD at O; then, since FP = FM,



$$OP = OC;$$

that is, we can find P by taking any point O on CD and setting off along OF a length OP equal to OC. The locus of P is therefore a strophoid with node at C and double focus at F.

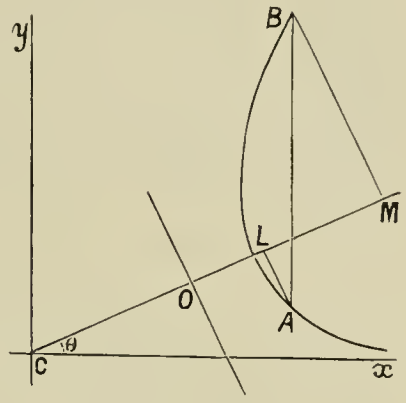
We might regard PM, PM′ as the asymptotes of a rectangular hyperbola cutting FM at fixed points equidistant from F; thus getting a solution of Question 15371 (see *Reprint*, New Series, Vol. vii., p. 101).

On CF take FS = FC; then SM′ is parallel to CM, and therefore perpendicular to PM′; hence PM′ touches the parabola with focus S and directrix CD. The strophoid is the pedal of this parabola with respect to C. By turning the triangle CPM′ round C through half a right angle, and making it shrink at the same time to half its present area, we can bring PM′ into line with PN or PN′; hence these lines also envelop parabolas, whose foci are corners of the square on S as diagonal. And a further result may be put as follows:—Let two equal parabolas be so placed that their directrices meet at right angles at C, the direct double point of the two figures, and let a right angle NPN′ slide with one arm resting on each parabola; then the locus of P is a strophoid.

(II.) Take C as origin and axes parallel and perpendicular to AB. Let A be (h, k_1), B be (h, k_2). If CO be an axis of the equilateral hyperbola

$$AL^2-LO^2 = BM^2-MO^2 \ldots (1),$$

let the co-ordinates of O be (X, Y). The equation of CM is



$$Yx-Xy = 0.$$

Therefore

$$AL = (Yh-Xk_1)/(X^2+Y^2)^{\frac{1}{2}},$$

$$AO^2 = (X-h)^2+(Y-k_1)^2;$$

therefore

$$AL^2-LO^2 = 2AL^2-AO^2$$
$$= [2(Yh-Xk_1)^2]/(X^2+Y^2)-(X-h)^2-(Y-k_1)^2,$$
$$BM^2-MO^2 = 2BM^2-BO^2$$
$$= [2(Yh-Xk_2)^2]/(X^2+Y^2)-(X-h)^2-(Y-k_2)^2;$$

therefore, substituting in (1),

$$2[(Yh-Xk_1)^2-(Yh-Xk_2)^2] = (X^2+Y^2)[(Y-k_1)^2-(Y-k_2)^2];$$

therefore $(k_1+k_2)Y^2+4XYh-(k_1+k_2)X^2 = 2Y(X^2+Y^2)$,

a cubic, the locus of the centres.

[N.B.—For the choice of axes the Solver is indebted to Mr. H. W. Richmond, Fellow of King's College, Cambridge.]

QUESTIONS FOR SOLUTION.

16150. (Lt.-Col. Allan Cunningham, R.E.) *Correction.* — For "Given N = 549 ... 403" read "N^x = 549 ... 403."

16165. (Professor R. W. Genese, M.A.)—A force acts at each vertex of a rigid polygon at right angles and proportional to the join of the adjacent vertices. Then (1) the system balances; (2) if each force retain its original direction, but the polygon be turned through an angle θ, the system is equivalent to a couple whose moment varies as $\sin\theta$.

16166. (F. B. Pidduck, B.A.)—If the force on a unit magnetic pole placed within an infinitely small cavity of any shape in a magnetized body is (a, b, c), and if (α, β, γ), (A, B, C) are the "magnetic force" and magnetization respectively at the same point, prove that we can choose the directions of the axes (supposed rectangular) so that $a = \alpha+AI_1$, $b = \beta+BI_2$, $c = \gamma+CI_3$, I_1, I_2, I_3 being three quantities depending only on the shape of the cavity.

16167. (W. J. Greenstreet, M.A.)—Solve

$$(y^3+2xy^2)y_1+(x+y)(xy_1-y) = 2y^3.$$

16168. (Lt.-Col. Allan Cunningham, R.E.)—If ${}^nC_x$ denote the number of combinations of n things taken x together, show that ${}^{p-1}C_x \equiv (-1)^x \pmod p$ when p is prime; and show how far this is true when p is composite. Also show that $\frac{1}{2}({}^{2q}C_q)-1 \equiv 0 \pmod{q^3}$ when q is a prime > 3; when $q = 3$ the divisor is only q^2.

16169. (R. W. D. Christie.)—When p is any prime of form $4m-1$ and r_1, r_2 are two different prime roots, prove that $r_1^2+r_1r_2^2 = 0 \pmod p$. Give a few other similar equations and show their utility in factorization. *E.g.*, $10^2+10.3^2 = 0 \pmod{19}$; also

$$2^2+2.13^2 = 3^2+3.15^2 = 13^2+13.14^2 \ldots.$$

16170. (T. Stuart, M.A., D.Sc.)—Solve, by an indirect process, the equation

$$x^2-Ny^2 = -246780271783$$

where $N = 2^{71}-1 = 2361183241434822606847$.

16171. (M. V. Arunachalan, M.A. *Suggested by* Question 16083, Professor Sanjana, M.A.)—Find the value of the infinite products

(1) $(1+x^4/1^4)(1+x^4/2^4)(1+x^4/3^4), \ldots,$

(2) $(1+x^4/1^4)(1+x^4/3^4)(1+x^4/5^4), \ldots.$

16172. (Professor Cochez.)—Trouver le maximum de $\sin x-p\sin y$, sachant que $\tan\frac{1}{2}x\tan\frac{1}{2}y = p$.

16173. (V. Ramaswami Aiyar, M.A.)—Certain right conoidal surfaces are such that when their generators are projected by parallel rays upon a fixed plane perpendicular to the axis of the conoid the envelope

of the lines so obtained is a curve whose shape is the same whatever be the direction of the rays of projection. Examples of such conoids are (1) the helicoid $z = a \tan^{-1} y/x$, which always gives a cycloid by such projection; (2) the hyperbolic paraboloid $z = a(y/x)$, which always gives a parabola; and (3) the cylindroid $z = a[xy/(x^2+y^2)]$, which always gives a three-cusped hypocycloid. Obtain other examples.

16174. (Professor NEUBERG.)—Trouver le lieu du centre d'une sphère qui rencontre trois plans donnés α, β, γ suivant trois cercles dont les rayons sont proportionnels à trois longueurs données a, b, c.

16175. (C. E. YOUNGMAN, M.A.)—If a circular cubic goes through its double focus, it can be inverted (with that focus as pole) into a reflection of itself.

16176. (Professor LAUVERNAY.)—Construire la courbe

$$\rho^2 - 4\rho \cos \tfrac{1}{3}\omega + 1 = 0.$$

16177. (Professor NANSON.)—Any tangent to a conic Σ cuts a conic S in P, Q. If A, B are fixed points, find the locus of the meet of AP, BQ. Discuss the cases in which (i.) A, B lie on S; (ii.) AB touches Σ; (iii.) S, Σ have double contact; (iv.) Σ breaks up into a pair of points; (v.) S breaks up into a pair of lines.

16178. (A. M. NESBITT, M.A.)—The normal at P to a parabola meets the curve again at Q. Show that PQ cannot be less than $\frac{1}{2}(3\sqrt{3})$ times the latus rectum.

16179. (Professor SANJÁNA, M.A.)—Through the points of intersection (real or imaginary) of the circum-circle of a given triangle ABC with the straight line $\alpha \cos A + \beta \cos B + \gamma \cos C = 0$ circles are described. If triangles polar to ABC be formed with regard to these circles, prove (1) that they are each in perspective with the given triangle, the axis of perspective being the Lemoine line; and (2) that the centre of perspective in any case is the pole of this line with regard to the varying circle.

16180. (JAMES BLAIKIE, M.A.)—ABCD is a parallelogram; P, Q, R, S are concyclic points in AB, BC, CD, DA, such that PR is parallel to AD and QS is parallel to BA. Find the locus of the point in which PR and QS intersect.

16181. (C. M. ROSS.)—Let ABCD be a quadrilateral. If P, Q, R, S be the centres of the squares described on AB, BC, CD, DA, show that PR = QS, and that these lines are at right angles.

16182. (W. F. BEARD, M.A.)—ABC is a triangle with AB = AC; any tangent to the in-circle whose centre is I meets BC, CA, AB at D, E, F. Prove that DI bisects the angle EIF. Generalize, if possible.

OLD QUESTIONS AS YET UNSOLVED (IN OUR COLUMNS).

8575. (D. BIDDLE.)—On a rectangular table of given dimensions and with raised edge two coins of diameter c_1, c_2 are tossed at random. Find the respective probabilities that both will lie (1) on one of the diagonals of the table, (2) on a line parallel to one or other diagonal.

8956. (W. J. C. SHARP, M.A.)—No function of one variable can be more than singly periodic for real values of the variable. A fresh imaginary period may arise for each set of incommensurable imaginaries which is recognized.

9116. (Professor SCHOUTE.)—Find the number of tetrahedra whose six edges meet twelve lines given in space.

9186. (F. MORLEY, B.A.)—Solve the equations

$$(y-z)(y^2-z^2) = a, \quad (z-x)(z^2-x^2) = b, \quad (x-y)(x^2-y^2) = c.$$

9236. (Professor MUKHOPÁDHYAY, M.A., F.R.A.S.)—Evaluate

$$f(x, y) = \frac{(x+y)^n}{x^n+y^n} \text{ when } x = y = 0.$$

NOTICE TO CORRESPONDENTS.

It is requested that all Mathematical communications should be sent to the Mathematical Editor,

Miss CONSTANCE I. MARKS, B.A., 10 Matheson Road, West Kensington, W.

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THE LONDON MATHEMATICAL SOCIETY.

Thursday, February 14th, 1907.—Sir W. D. Niven, Vice-President, in the chair.

Prof. A. R. Forsyth gave an account (from details kindly supplied by Prof. G. Darboux) of the life and scientific work of the late Colonel A. Mannheim, who was an Honorary Foreign Member of the Society.

The following papers were communicated:—

"On Repeated Integrals," by Dr. E. W. Hobson.

"On the Projective Geometry of a Binary Quartic and its Hessian," by Prof. E. B. Elliott.

"On a Formula for the Sum of a Finite Number of Terms of the Hypergeometric Series," Prof. M. J. M. Hill.

"On Groups defined by the Order of Two Generators and the Order of their Commutator," Prof. G. A. Miller.

Lieut.-Col. A. Cunningham made an informal communication "On Hyper-exponential Numbers."

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SYLLABUS.

I. (*Feb.* 14.) *The Data of Psychology:* Nature of consciousness general and individual: insulation of individual consciousness: resulting difficulties: the subjective and the objective: distinction between the self and the ego: advantage of educator as external influence: psychological data of education: nature of the soul: evolution of personality: interaction of personalities: self-realization as ultimate goal of education.

II. (*Feb.* 21.) *Nature of the Soul:* essential unity of the soul: various modes of being conscious: the so-called "faculties": dangers of hypostasis: distinction between soul and soul-content: education as a process of assimilation of and by the external world: apperception: knowledge as power: the turning of fact into faculty.

III. (*Feb* 28.) *The Perceptual:* the senses general and special: contribution sensation makes to knowledge: classification according to "the preferred sense": the training of the senses: distinction between sensation and perception: the mind's share in perception: meaning and limits of observation: the gaping point: rhythm of concentration and diffusion: the place of inference.

IV. (*March* 7.) *Ideas:* relation between conception and perception: the active and the passive view of ideas: presented content and presentative activity: temporary and permanent changes in presentative activity: the place of definition in relation to ideas: degrees of generality of ideas: transitive and intransitive elements of thought: the grouping and interaction of ideas: mediate and immediate recall.

V. (*March* 14.) *Association and Habit:* a general principle of organic development not limited to ideas: relation to habits: place and value of habits in education: Fichte's "to form habits is to fail": accommodation, correlation, and co-ordination: recognized laws of the association of ideas: the continuum of common interest: redintegration: convergent and divergent association.

VI. (*March* 21.) *Memory:* fundamental nature: not limited to intellectual process: personal identity: predominance of the purposive element in memory: question of the possibility of improving the quality of memory: mnemonics and the educational applications: learning by rote: reminiscence and recollection: "verbal" "pictorial" and "rational" memory: memory and reality.

VII. (*April* 18.) *Imagination:* distinction from memory and thinking: limitations imposed by "picture thinking": so-called "kinds" of imagination differentiated by the number and kinds of conditions that limit its exercise: importance of clearly imaged ends in practical life: function of the imagination in Geography and History: its æsthetic use: nature and moral value of ideals.

VIII. (*April* 25.) *Interest and Attention:* nature of each: interaction between them, each in turn the cause of the other: interest as means and as end: relation between the interesting and the easy: attention as voluntary, non-voluntary, and spontaneous: place of each kind in educational process: mechanism of attention: its rhythm: its duration.

IX. (*May* 2.) *Thinking:* fundamentally an adaptation of means to ends on the ideational plane: the purposive aspect of apperception: thought and language: constant element in thought: laws of thought as thought: the dynamic basis of all thinking: nature and source of errors in thinking: the place and function of syllogistic and other formal modes of thinking.

X. (*May* 9.) *Temperament and Character:* nature of temperament: ancient and modern classifications of temperaments: physical characteristics of the temperaments: permanency of temperaments and means by which they may be modified: relation between temperament and character: classification of character-types: the advantages and dangers of such classifications in education.

XI. (*May* 16.) *The Emotions:* unreasonable depreciation of the emotions by certain philosophers: value of emotions as support of intellectual process: classification of the emotions: expression of the emotions: Lange-James theory of relation between emotion and its expression: important educational bearings of this theory.

XII. (*May* 23.) *Will and Desire:* relation of desire to feeling and to will-nature and function of motive: theory of the "strongest motive": the motiveless will: practical aspects of the theory of the freedom of the will: the development of the will: subjective and objective aspects: possibility of training the will.

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The next Monthly Meeting of the Members will take place on Wednesday, the 17th of April, at 7.30 p.m., when J. J. FINDLAY, Esq., M.A., Ph.D., will read a Paper on "The Growth of Moral Experience in the Young (with special reference to the Programme of the Moral Instruction League)."

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1. DIPLOMAS.—The next Examination of Teachers for the Diplomas of the College will commence on the **26th of August.**

2. PRACTICAL EXAMINATION FOR CERTIFICATES OF ABILITY TO TEACH. — The next Practical Examination will be held in **May,** 1907.

3. CERTIFICATE EXAMINATIONS. — The Midsummer Examination for Certificates will commence on the 25th of June.

4. LOWER FORMS EXAMINATIONS. — The Midsummer Examination will commence on the 25th of June.

5. PROFESSIONAL PRELIMINARY EXAMINATIONS.—These Examinations are held in March and September. The Autumn Examination in 1907 will commence on the 3rd of September.

6. INSPECTION AND EXAMINATION OF SCHOOLS.—Inspectors and Examiners are appointed by the College for the Inspection and Examination of Public and Private Schools.

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For Syllabus see page 152.

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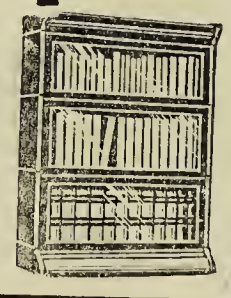

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> The Register shall contain the names and addresses of all registered teachers in alphabetical order in one column, together with the date of their registration and such further statement as regards their attainments, training, and experience as the Council may from time to time determine that it is desirable to set forth.

Here is a word-for-word reproduction of the clause of Mr. Birrell's Bill abolishing the Register, and of Lord Monkswell's proposed amendment in the House of Lords.

Though the application of the closure in the House of Commons prevented discussion of the abolition clause, the acceptance of Lord Monkswell's proposal by the Government would seem to indicate that the course is quite clear for the enactment of Clause 12. To be sure, it is open to amendment. The question as between one column and two is by no means definitely settled by a common consent in favour of one, so far as teachers are concerned; but the parliamentary chances are overwhelmingly against the maintenance of two columns. There are the usual difficulties on both sides, but practically it will suffice to have a Register. The next point of consequence is the lower limit of registrable qualifications. The determination of that point is not at all likely to be taken out of the hands of the Registration Council. It would be sanguine to expect that this body will be so happily inspired as to draw the line at once in the final position: probably, with all their information and experience, they will have to proceed by trial and failure. Obviously, however, the attempt should be to fix a really creditable limit. That may not be readily practicable at first; but, after all, there is no sense in registering qualifica-

tions that essentially do not count in pedagogic reckoning, even if they should be found in schools that rank as secondary. No doubt there will be a claim to registration on the mere fact of being a teacher—a claim to exhibit lack of qualification. One must be patient: things will soon right themselves. As to the composition of the Registration Council, one cannot but anticipate that special care will be taken to make it thoroughly representative. The claims of secondary education, in particular, are too clear to be underestimated.

The unanimous feeling of the profession in favour of a Register has grown out of the thoughtful proposals of far-sighted members of the profession, and been confirmed by the experience of the working even of an imperfect instrument. The dead Register admittedly stimulated individual teachers to work for a higher standard of academic qualification, or to add a specialized to an ordinary training; and, in particular, it gave a weighty impulse to the movement in favour of systematic training for the profession, as well as to the growing sense of professional solidarity. The general appreciation of the importance of the Register will no doubt carry it through. Yet the Bill as a whole may encounter rougher weather than Mr. McKenna anticipates. Though its details individually excited but little remark during the conflict on the larger questions of Mr. Birrell's Bill, that is no secure guarantee that they will not evoke keener interest in the absence of overshadowing issues. Various objections are already reported. How far the critical spirit may go remains to be seen when the Bill comes to discussion in Parliament. But, whatever modification other clauses may undergo, it is to be hoped that Clause 12 will substantially be passed—if not as it stands, then in some improved form—so that the Register may be re-established on a more durable and advantageous basis.

NOTES.

Prof. Hay, in submitting the annual abstract of the financial position of Aberdeen University, remarked that it must be difficult for persons not familiar with the modern developments of university work to understand the apparently Gargantuan appetite of the universities for money. "Huge sums seem to be swallowed without much evidence that the appetite is any the less keen." The explanation lies in the prolonged process of starvation, or perhaps hibernation. Prof. Hay said:

The truth is that the Scottish universities, although achieving marvellous results with the sources at their command, were, until recently, scarcely better than secondary schools, and were grossly lacking in staffing and equipment and accommodation for carrying on their work in a way worthy of the highest educational institutions of a country. Even now, with all the growth that has taken place in the last two or three decades, they are far behind many Continental and American, and even colonial, universities in point of equipment, and especially of staffing and facilities for research. I am not overstating the case when I say that in a single department of a fully equipped American university of the best type as many teachers may be found as in a whole Faculty of a Scottish university. The result is that the utmost encouragement and freedom is given to specialization in teaching and investigation, with a corresponding output of very highly trained graduates and a continuous flow of research of the highest quality. I know I express the views of the whole four Scottish universities when I suggest that, if another £1,000,000 were placed at their disposal, every pound of it would find a fitting and needed application, and that without adding a single shilling to the emoluments of any of the present professors.

The country and the Authorities need to be further awakened to the advanced requirements of the time. And the principle has applications a long way beyond the universities of Scotland: witness the huge, yet all too small, demands of Oxford and Cambridge, and indeed of all the institutions of higher learning.

The Council of King's College, London, has now published the scheme for the incorporation of the College with the University of London, and at the same time issued an appeal for £125,000 to clear off the debt of the College and of the School and to form an endowment fund. University College asked for, and obtained, £200,000; and we cannot doubt that King's will soon find the means of removing the pecuniary obstacle to incorporation. The Theological Faculty, however, which may be regarded as the distinctive faculty of King's, cannot be incorporated in the University; for the University is barred by its constitution from undertaking the management of a Church of England college. The corporation of the College therefore will not be dissolved, and the Council will remain as the governing body of the Theological Faculty; and the requirement of the trust deeds that "the duties and doctrines of Christianity in accordance with the teaching of the Church of England shall be for ever combined with other branches of useful education" will be satisfied by free intercourse with the University side of the institution. The arrangement is a little curious—if we understand it aright; but it is an ingenious and simple solution of an apparently serious difficulty, and only a modicum of common sense is necessary to make it work thoroughly well in practice. We are glad to observe that the great Companies of the Goldsmiths and the Clothworkers have shown a handsome example in forwarding the release of the College from the one hindrance to immediate incorporation.

The people of Wales have always claimed credit for an intense interest in education. At any rate, their national spokesmen have not been silent on the theme; and the management of their elementary and secondary education is passing into their own hands with scarcely a murmur from the deprived Anglo-Saxon, largely (it may be supposed) because everybody has come to believe that Welshmen are ardently desirous, as well as competent, to develop local instruction with exemplary efficiency. Is there, however, some weakness of appreciation of the higher forms of scientific teaching and research? Principal Griffiths openly laments "the lack of interest" in scientific work shown "by the captains of industry in South Wales." The subject of lamentation is, indeed, a very general one, and the Principal is a forceful educationist, with whom busy commercial people have difficulty in keeping intellectual step. Another aspect of the case goes deeper: there would appear to be some popular concern about an alleged antagonism of science to religion. The study of natural science being the study of truth, Principal Griffiths naturally fails to understand the argument; and Sir Philip Magnus, who is fulfilling an educational mission in these parts, tells the Welshmen that

he has always thought that there should be no possible conflict between science and religion. The allegation is no new development, and both science and religion have prospered in spite of it; but it comes as somewhat of a surprise from a people so keen for educational advancement. In any case, it is to be hoped that such a mistaken view, however natural in certain mental stages, will neither prevent nor delay the progress of the scientific research necessary for making the best of the industries upon which the mundane prosperity of South Wales depends.

THERE should be no difficulty in getting to understand the reformed pronunciation of Greek and Latin—there are competent guides in plenty. The Cambridge University Press has just issued "The Restored Pronunciation of Greek and Latin," with tables and practical illustrations, by Prof. E. V. Arnold, Litt.D., of Bangor, and Prof. R. S. Conway, Litt.D., of Manchester, in a third and revised edition, embodying the scheme approved for Latin by the Classical Association (1s.); and also, as a penny leaflet, "The Restored Pronunciation of Latin"—the "syllabus approved by the Philological Societies of Oxford and Cambridge, and recommended by the Classical Association for adoption by classical teachers." Messrs. George Bell & Sons publish "How to pronounce Latin"—"a few words to teachers and others," by Prof. Postgate, Litt.D. (1s.), who endeavours "to present the facts and issues upon which a judgment must proceed in as direct and simple a form as possible, and with the minimum of detail compatible with clearness and fairness of statement." Messrs. J. M. Dent & Co. have also now issued "The Roman Pronunciation of Latin," recommended by the Classical Association, approved by the Head Masters' Conference, December, 1906, and by the I.A.H.M., January, 1907"—a sixpenny reprint of the sections on pronunciation and of text with phonetic transcript given in "Dent's First Latin Book," by Messrs. Atkinson and Pearce. "The introduction of some order into the chaos of Latin pronunciation in England," says Prof. Postgate, "may be justly described as a prime need of classical teaching." With these pamphlets before one, the remedy appears to be sufficiently simple

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THE new Scottish Education Bill introduced by Mr. Sinclair purports to effect certain changes in machinery without altering the existing organization. The Bill confers certain additional powers on the School Board, creates the necessary machinery for the provision of meals to underfed school-children, gives School Boards certain well defined powers for dealing with defective children, and arranges for medical inspection and for remedying bad or insanitary conditions of school buildings. It introduces compulsory attendance at evening continuation schools: where there is ground for believing that owing to the non-continuation of their education much of the money spent on certain children has been wasted, the School Board is empowered to make by-laws requiring that children who have ceased to attend day schools shall attend continuation schools up to the age of seventeen years. Provision is made for pensions for teachers, which would be voluntary on the part of the School Board; grants in aid of these pensions may be made from the Local Taxation Account. There are provisions relating to examinations and the Leaving Certificate. Lastly, the Bill abolishes the cumulative vote, and makes the Parish Council franchise applicable to School Boards. The cumulative effect of these provisions will be very considerable, and, so far as one can see at present, they are substantially in the right direction.

SOME epigrammatist has said, with the full latitude of epigrams, that boys are always reasonable, masters sometimes, parents never; but he is not recorded to have given any opinion about the reasonableness of members of public bodies. It is of the irony of things that so steadily reasonable a master as the High Master of Manchester Grammar School should have got into hot water over a matter of discipline by corporal punishment. The details are of no further interest: Mr. Paton has, of course, been completely justified by his governors, and the form of attack upon him has been censured by the indignant opinion of the profession in Manchester. The general question of the propriety of corporal punishment, however, has been much debated, and it may be well to record Mr. Paton's particular representations, although they neither are nor profess to be exhaustive:

(1) Corporal punishment is the tradition of this school and in other British schools of this grade; (2) no other form of punishment has been devised which marks so effectively the differences between offences against the school regulations and offences against the unwritten moral law (such as lying, impurity, dishonesty, wilful disobedience to authority); (3) it is recommended for the discipline of adolescents by the leading authority on education in America, Dr. Stanley Hall, in his book on "Adolescence"; (4) it needs careful safeguards and supervision, and it is for this reason that the High Master is by the scheme made responsible for all cases in which it is inflicted, whether by himself or by his colleagues.

Of course, in any case, this form of disciplinary remedy must be a very last resort.

SUMMARY OF THE MONTH.

THE sixth annual report (for the year 1906) submitted by the Executive Committee to the Trustees of the Carnegie Trust states that under the scheme of allocation for five years of an annual grant of £40,000 among the four Scottish Universities, which became operative on January 1, 1903, sums amounting to £37,288. 13s. 1d. have been claimed and handed over during the year 1906, making for the four years ended December 31, 1906, a total expenditure of £134,489. 4s. 3d. In addition, sums amounting in all to £1,120. 8s. 8d. have been paid up to date as interest on unexpended grants still in the hands of the Committee. The grants for library purposes and for provisional assistance in teaching, amounting for the year to £6,400, have been fully paid. The grants for buildings and permanent equipment available for 1906, including a balance of £6167. 12s. 8d. brought forward, amounted to £26,567. 12s. 8d. Of these the sum of £26,188. 13s. 1d. has been claimed. Payments towards teaching endowments amounted for the year to £4,700, leaving under that head an unexpended balance of £25,131. 16s. 2d. Under the head of buildings and permanent equipment grants of capital sums amounting in all to £9,000, to be drawn upon as required and approved during the period up till December 31, 1907, were allocated to extra-mural schools. Of this total £8,291. 15s. 2d. has been expended. Under the head of provisional assistance in teaching, grants amounting to £495 have been offered for the academic year 1906–7. Appointments were made to 17 fellowships and to 37 scholarships, and grants of various amounts were assigned to 40 applicants. The total expenditure for 1905–6 under the scheme of endowment of post-graduate study and research was £6,302. 19s. 2d. The estimated expenditure for the current

academic year is £8,064. Applications for fellowships, scholarships, and grants for the academic year 1907–8 must be lodged, on or before May 1, with the Secretary to the Trust, from whom application forms and regulations can be obtained. In the Royal College of Physicians' Laboratory 29 workers have carried out investigations during the year. For the winter session 1906–7 the number of beneficiaries under Clause B is 2,911, as compared with 3,184 for the previous winter session. The diminution in number of beneficiaries and in expenditure upon class fees is probably due in great part to modifications which have been made in the regulations. The most important business immediately before the Committee is stated to be a reconsideration of the needs of the Universities and other recognized institutions with reference to a fresh distribution of the funds of the trust under Clause A. The Committee propose, pending a decision upon the ultimate lines of a new quinquennial distribution, to treat claims with the most careful consideration on the scale of their previous allocation to the Universities. During the year 1906 twelve beneficiaries have voluntarily refunded the class fees paid for them by the Trust.

By the advice of the Privy Council His Majesty has ordered that the term of office of the Teachers' Registration Council shall be further continued until July 31 of the present year.

The Dublin University Defence Committee have circulated a reply to the proposals enunciated by Mr. Bryce as the views of the Government. These proposals, they urge, would prove fatal to freedom of education and research and the progress of higher university education in Ireland, and would further aggravate the unfortunate religious difficulties that now exist. It has been suggested in favour of the scheme that it would bring the young men of Ireland together in the class-rooms of a common university; but the Committee state that a study of the evidence given before the Royal Commission shows that the conditions upon which the Roman Catholic hierarchy insist would make this part of the proposals inoperative. Since 1793 Trinity College has thrown open her degrees, and since 1873 prizes, fellowships, and professorships, to all religious denominations, and at the present moment Protestant Episcopalians, Roman Catholics, Presbyterians, and other religious denominations are represented among its scholars, fellows, and professors. The Committee appeal for the support of "all who value freedom of thought and liberal education."

At a meeting of the Council of the Catholic Defence Society the following resolution was unanimously adopted:—

That we, the members of the Council of the Catholic Defence Society, adhere to our views on the Catholic University question as set out in the statement furnished by our Society to the late University Commission. Nevertheless, we are convinced that in the scheme outlined by Mr. Bryce the Government are making an honest attempt to settle the question, and offering the best practical solution under existing circumstances. Accordingly, we adopt the following resolutions passed by the Catholic Graduates' and Undergraduates' Association:—"That the Government's Scheme of Irish University Reform, designed to secure educational equality for Catholics through the foundation and endowment of a great college in Dublin as a constituent college of a remodelled Dublin University, merits our strongest support; and we affirm our conviction that to be in consonance with Catholic ideas, and acceptable to the Irish people, such new college must be granted—(1) whatever faculties in Arts and Science, equipment, academic privilege, and public endowment any other constituent college of the common university may possess; and (2) the fullest possible measure of autonomy."

At a public meeting held (March 14) at the Mansion House, Dublin, under the auspices of the Catholic Graduates' and Undergraduates' Association, in support of the Government's scheme of Irish University reform, there was read a letter from Mr. John Dillon, M.P., in which he said:

From the situation with which we have to deal it appears to me perfectly clear that all of us who consider that the plan of the Government, if carried into effect, would be an enormous improvement on the present state of affairs are bound to give this scheme all the support in our power.

At a meeting of the Senate of the Royal University of Ireland, when twenty members out of thirty-seven were present, the following resolutions were carried by thirteen votes against six:—

1. That, while the Senate feels that it was its right and duty, as long as the various plans for the settlement of the question of university education in Ireland were under consideration, to express its views clearly and strongly on the undesirability of establishing a single rigid system of university education shaping the whole intellectual culture of the country in one mould, now that the outlines of a scheme have been put forward in the name of the Government with whom the responsibility rests, the Senate does not deem it proper to take any course which might prevent or obstruct the immediate removal of one of the greatest and most crying grievances under which the Irish people labour. The Senate, by its own action in asking for a Royal Commission, had already shown how keenly alive it was to the urgent need of having this question dealt with, and therefore cordially welcomes the announcement that the Government will take it in hand during the present session of Parliament.

2. That, while the Senate is prepared to give the most careful and friendly consideration to the scheme of the Government when published in full detail, it submits expression of its conviction that in any scheme which would involve the establishment of one or more federal universities it is essential, in order to avoid the evils of the stereotyped system of higher education, that there should be granted to the federated colleges the largest possible amount of autonomy on the lines recommended unanimously by the Robertson Commission and with practical unanimity by the recent Commission.

The resolutions were moved by Sir Christopher Nixon and seconded by the Rev. Dr. Delaney.

The Armagh Diocesan Council, at their quarterly meeting (March 5), the Lord Primate presiding, unanimously adopted the following protest:—

(1) The proposal to merge T.C.D. in a new conglomerate university would mean, in our opinion, the destruction of the one institution in Ireland that, by a glorious history of some three hundred years, has proved its success and usefulness, without any compensating advantages to the new and unhistoric body, framed out of the relics of existing and useful institutions.

(2) On the other hand, the erection of a sectarian college in Dublin University, and subject in any shape or form to the will or control of the Roman Catholic hierarchy, would be a distinct breach of faith with the Protestants of this country. In Dublin University and T.C.D. there are now no tests; all are free to enter and partake of the advantages offered on equal terms. But under any proposed two-college arrangement this equality would be destroyed, and Protestants of all denominations placed at a disadvantage.

(3) But if, which we deprecate, a sectarian college be introduced into Dublin University in reversal of the policy of Fawcett's Act of 1873, the principles of equality and justice to the Church of Ireland would seem to require the repeal of that Act.

(4) While fully recognizing the claims of others to such educational advantages as they legitimately desire, we protest emphatically against any attempt to deprive us of that liberal education which we at present enjoy (and which is as open to them) and against any scheme which would compel Dublin University, after abolishing all tests in T.C.D., to accept and practically submit to union with a test-bound system, retrograde in itself, and certain ultimately to give satisfaction to no one.

A non-political meeting was held at University College, Oxford (March 9), the Master of University (Dr. R. W. Macan) in the chair. The Rector of Lincoln moved, and Sir Edward Carson seconded, the following resolution:—

We, the undersigned, being resident members of the University of Oxford, desire to protest against any legislation which would transform the University of Dublin into a University comprising colleges animated by conflicting educational ideals. Such change must, in our opinion, be attended by the introduction of injurious division into the administration of the University and must subject teaching and research to limitations detrimental to liberal education and full inquiry. This protest is not made on any political grounds, but solely in the interests of liberal education.

The resolution was adopted without dissent, and forms of protest were signed by nearly the whole of the large and influential attendance.

An important meeting was held at Gonville and Caius College, Cambridge (March 2), Sir Robert Ball presiding, "to defend the interests of Trinity College, Dublin, as a place of learning and research." A resolution in substantially identical terms with the Oxford resolution was proposed by the Master of Trinity seconded by the Master of Christ's, and duly carried.

The following memorial has been addressed to Mr. Birrell by the Senate of the University of Birmingham :—

The Senate of this University desires to express its hope that, whatever changes are made in connexion with higher education in Ireland, the independent university *status* of Trinity College, Dublin, may be left intact.

Baron Kikuchi delivered an address on patriotism to the pupils of University College (London) School, of which he was formerly himself a distinguished pupil (March 11). Japanese boys and girls, he said, were taught the fundamental character of the Empire—the relation between the Imperial House and the people. It was the pride of the people of Japan that their Emperors were all of one dynasty, and that their country had never been conquered by foreign foe. Their Emperors had always regarded the sorrows and sufferings of the people as their own, and it was a saying in Japan that "the Emperors have suffered before the people and rejoiced after the people." Baron Kikuchi gave two instances to show the feeling which animated the Samurai in feudal times when the principal virtues of the fighting race consisted of loyalty to the lord and devotion and self-sacrifice in his service—notably the case of the Forty-seven Rônins, related in Mitford's "Tales of Old Japan." When, in 1868, the power of government was restored to the Emperor, the Japanese saw that they were inferior to the Occidental nations, and, that, if they were to become their equals, they must devote their whole energy in gaining the knowledge and arts of those nations. Japanese spirit and Occidental knowledge were what they wanted, and they tried to learn not only in material prosperity, but also in morals and habits. He had told Japanese boys to emulate the boys of England in their love of truth, fair play, kindness to strangers, loyalty to their King, and patriotism, and he assured them that, if they came to England, they would see by the tombs and tablets in Westminster Abbey and St. Paul's that the English reverenced their great men as the Japanese worshipped their ancestors. When the Anglo-Japanese alliance was formed the Japanese felt they had come within the comity of nations. He would like them to remember that that alliance was based on a community of interests which were not selfish. Their interests were neither narrow nor aggressive nor injurious to other nations, but stood for peace for the world and equal opportunities for all.

In his annual report to the Education Committee of the London County Council for the year ended March 31, 1906, the Executive Officer, dealing with higher education, gives an account of the development of secondary education and the reorganization of the Council's scholarship scheme. The Council last year made a grant to the University of London and four of the schools of the University—University, King's, and Bedford Colleges, and the London School of Economics and Political Science—and awarded fifty scholarships and exhibitions to students intending to pursue a course of education of university standard at some approved college or institution. During the past two years 4,148 junior county scholarships had been awarded to elementary-school pupils, while about 800 probationer scholarships are given yearly to intending elementary-school teachers. 52 secondary schools were aided by the Council, and Council scholars were maintained at 36 other public secondary schools, at a total cost in grants and fees of £108,394. The Council had, during the past two years, become responsible for the maintenance of 12 secondary schools, and when projected institutions were finished would have under its control 30 secondary schools, with accommodation for 10,000 pupils. Attention is also drawn to the new scale of salaries for secondary schools, to the system of inspection of secondary schools, and to the modifications in the methods of training pupil-teachers and the establishment of additional colleges for that purpose.

The Education Committee of the Lancashire County Council deplores that so many parents take advantage of clauses enabling half time or full time exemption from school attendance to be secured on a certificate that the children have made 300 or 350 attendances respectively during each of five years, irrespective of any standard of educational attainment. During 1906 labour exemption certificates were granted for half time exemption to 5,776 children on a mere attendance qualification, whereas only 107 were granted on the fifth standard qualification, and in the same year 8,498 children obtained full time exemption on attendance qualification, as compared with only 127 exempted on the ground that they had reached the seventh standard.

A largely attended conference on the teaching of history in schools was held at the Regent Street Polytechnic under the auspices of the Federated Associations of London Non-Primary Teachers. Prof. J. W. Adamson, of King's College, presiding (March 2). Miss Alice Gardner, of Newnham College, Cambridge, read a paper on "Some Hindrances to the Adequate Teaching of History in English." They were not, she said, satisfied with the methods and results of historical teaching, and the first thing was to secure that it should receive more recognition as an important branch of education. Among the most conspicuous hindrances to effective historical education were the want of specially qualified teachers, the want of time allowed for the subject, and the want of tradition to fix standard and methods. The removal of all these hindrances was fully within the range of practical politics. Of late some had aimed at the most recent history possible, and teachers had been driven to the *Times* summaries for accounts of events which no historian had been able as yet to draw in perspective. The rational use of books was one of the most valuable arts that a teacher could communicate. Dr. J. E. Morris, of Bedford Grammar School, read a paper on "How to supplement our Text-Books in History." He said the one thing needful was to arouse interest—it might be even enthusiasm—and more than dull mechanical accuracy should be required. In the discussion which followed various suggestions were made, and the chairman observed that it was inevitable that a teacher should regard history as a means of getting at the student's mind and character, and that being so, there should be some principle of selection in the teaching of that subject. There was a good deal of apparatus that a teacher had a right to demand, including good books and pictures.

The Scottish Branch of the English Association held its spring meeting in Glasgow University (March 16). Prof. Saintsbury presided, and there was a large attendance. A discussion on the subjects of the syllabus for the year was initiated by Principal Williams, of the Established Church Training College, Glasgow, who dealt with many suggestions. He expressed the opinion that the teaching of English should not be held to include such subjects as history and geography. In considering research work, he thought they should co-operate with the Scottish Text Society in the attempt to investigate the Scottish tongue and to endeavour to preserve old dialects. He suggested that there should be a chair of the English language, including Scotch, in the universities in addition to the present chairs of English literature. In regard to the teaching of composition and literature in schools, he said they ought to consider how they could encourage originality of thought and treatment. They should first accept the pupil's individual taste to guide their choice of home reading, taking this as a starting point, and then trying to wean him to a fuller appreciation of the best in literature. He condemned the Preliminary University Examination, holding that it was the business of the schools to say that their scholars were able to profit by a university education, and he thought there should be a change in the manner of allocating bursaries. These should be given not to those that could win them, but to those that needed them. Mr. E. S. Valentine, Dundee, urged the non-professional classes to join the Association, which was open to receive into membership all who were interested in the study of English. He advocated the establishment of local centres, and pointed to the success of that recently formed in Dundee. Dr. Baildon, Dundee, agreed with Principal Williams that they should investigate the dialects and folk-lore of Scotland. A paper on "The Teaching of Poetry" was read by Mr. J. C. Smith, H.M.I.S., and Prof. Saintsbury delivered an address on "The History of the English Language as an Organ of Speech and Literature." It was decided to hold the autumn meeting of the Association in Dundee on the last Saturday of October.

A meeting was held at the Training College for Women, Wollaston Road, Cambridge (March 9), to form an Association of Teachers engaged in the Professional Training of Students preparing for a University Diploma in Education. Representatives were present from many of the most important centres, and a number of leading educationists in the universities and in the training colleges sent expression of their approval. The chair was taken by Prof. Adams (London Day Training College), who was elected President. Miss Cooper (Oxford), Miss Powell (Cambridge), and Mr. Keatinge (Oxford) were elected Vice-Presidents; and Miss L. Brackenbury (Train-

ing College for Women, Wollaston Road, Cambridge) and Mr. Charles Fox (Cambridge University Day Training College) were appointed Hon. Secretaries. Miss Morton (Bedford College, London), Prof. Adamson (King's College, London), Mr. Oscar Browning (Cambridge University Day Training College), and Prof. Welton (Leeds University) were elected to the Committee. The meeting discussed the constitution of the Association and the new Register. It was decided to hold the next meeting in London. Particulars of membership may be obtained from either of the Secretaries.

At the annual meeting of the Cardiff Educational Society (March 14) Principal Griffiths gave an address on "Wales and Science." He pointed out that natural science had received less attention in the Principality than any other branch of intellectual effort, and more especially was it necessary that the matter should be discussed, because in South Wales they were dependent on occupations directly related to the scientific advances which had been made during the past two generations. To neglect the study was akin to slow suicide. He combated the arguments urged against the study, and as regarded objection from the religious point of view said he could not understand it, because the study of natural science was the study of truth. He asked them to think of the work of Faraday, Pasteur, Lister, Kelvin, and others, and the sum of benefits conferred upon mankind. It was their duty to excite greater interest in the matter among Welsh people. How it could best be done was a problem, but he suggested that it would be a patriotic work if some Welsh scholar would publish Welsh translations of the primers of Huxley, Roscoe, and others. He was certain that the future of their University College was dependent on the attitude of the people towards the study. The purpose of a college was not only to educate, but to be of real practical service to the community in which it was placed. He lamented the lack of interest in the work by captains of industry in South Wales, and pleaded for sympathy and financial support to carry on the work of research. Sir Philip Magnus moved a vote of thanks to Principal Griffiths. He hoped there was no ground for his assertion that the people of Wales were indifferent to the great advantages which science brought into life in every form. He had no desire to say much on the subject of apparent opposition between science and religion, but it had always seemed to him that there should be no possible conflict between the two. As to the future of the University College, he agreed that, whilst the great functions of a college closely associated with a university were to teach, its principal function was not so much to impart the knowledge which already existed as to push back the barriers of knowledge, creating new knowledge for future generations.

At an examination in Hygiene in its bearing on School Life held by the Royal Sanitary Institute in Blackburn on March 8 and 9, eleven candidates presented themselves. Four candidates were awarded certificates; three were successful in Part I.; and two in Part II. On the Examination in Sanitary Science as applied to Buildings and Public Works, one candidate (out of seven) was awarded a certificate. Ten candidates (out of twenty-seven) were certified, as regards their sanitary knowledge, competent to discharge the duties of Inspector of Nuisances under the Public Health Act, 1875.

UNIVERSITIES AND COLLEGES.

(From our own Correspondent.)

Oxford. Except for the appointment of the new Chancellor, the term has been singularly uneventful. When first names were put forward for the successor to Lord Goschen popular talk centred a good deal round Lord Lansdowne and Sir Alfred Milner. Then "it transpired," as the cheap papers have it, that Lord Lansdowne did not seek nomination, and that Sir Alfred Milner had promised to support Lord Curzon. Meantime the Curzonites had been busy, and Balliol, All Souls, and St. John's were engaged in promoting his claims. A "non-political" meeting was called by the Vice-Chancellor, and, after some rather desultory talk, it appeared that Lord Curzon would be a popular nomination. As a result a rumour spread that there would be no opposition. However, Christ Church had got to be reckoned with, and within a day or two it became known that Lord Rosebery had consented to stand. So far as one could judge from the "resident" views, there seemed a considerable following for him, and even the day before the election a prominent partisan of the other side declared that the result of the voting would show only a small margin one way or the other. However, the estimate was based on an erroneous conception of the views of the "outside" members of Convocation, who flocked to Oxford in quite considerable numbers, and proved to be almost exclusively Curzonites. Indeed, Lord Curzon's Committee had organized the support of their candidate with great elaboration. Even a special afternoon train for voters for Lord Rosebery, with gowns provided at the Apodyterium and a dining car on the return journey, failed to prove an attraction, and it is said that one of the most powerful Great Western engines succeeded only in bringing down twelve voters. The extraordinary majority in favour of Lord Curzon came as a complete surprise even to his most devoted adherents. Whether now, true to his Oriental ideas of magnificence, the new Chancellor will have a "durbar" of great pomp to celebrate the installation remains to be seen. If he wants a ceremony, he will have a supporter in the Vice-Chancellor, to whom these functions are dear; but, seeing how short a time has elapsed since Lord Goschen's installation, it looks as if there would be a "shortage" in distinguished recipients for the honorary degrees at Encaenia. So far as the undergraduates were concerned, the affair was almost unnoticed—though very different would have been the scenes at a Scotch University.

The only other appointment of first rank made this term has been that of Mr. Blakiston to succeed Prof. Pelham in the Headship of Trinity. The selection does not—so far as the outsider can gather—appear peculiarly popular, the new President being known only as a successful college tutor. It was thought that Mr. Raper (who might have been elected President probably on two previous occasions) might have consented this time; and other names were mentioned.

Mr. E. S. Craig, of University, has been chosen by the Vice-Chancellor and Proctors to fill the post of Assistant Registrar under Mr. Leudesdorf, and in this case official action has been supported by outside sentiment.

During the vacation Oxford is being invaded by the N.U.T., and several colleges are assisting in entertaining the delegates. At the end of the year the Head Masters' Conference are coming to Oxford on the invitation of Magdalen College School; so that educational views and foibles will this year be much in evidence.

As every one knows, we lost the Boat Race; but, as nearly all our crew are young and have been well taught, they may succeed in turning the tables next year. To compensate for the Boat Race we won the Sports last Friday by the largest margin known in the history of the Inter-University event.

(From our own Correspondent.)

Cambridge. Dr. Inge has been duly elected into the Lady Margaret Professorship of Theology, and the University is to be congratulated on the fact. As Prof. Barnes has since pointed out, we must not think that, because the machinery has been successful in picking out the right man this time, it does not merit speedy and well deserved abolition. Four names are selected by the Council, and, after certain lectures or praelections, voting by the graduates in Divinity settles the matter. Whichever of the four candidates had been elected, no great harm would have been done; and, if all four had been appointed with the emoluments of one, we might have earned a reputation for business capacity and thoroughgoing Philistinism. A University Radical would be thought a crusted Tory in the large world outside: these thoughts are heresy.

One more Readership is being created. Forestry is the subject this time, and the lucky Reader will have a stipend of £400 per annum; a Lectureship in the same subject will follow. This will enable us to compete with Oxford, and perhaps secure us against competition in the task of training men for appointments in the Government service in India and elsewhere.

A very welcome change has been made in the programme for the annual University prize-giving and recitation of prize exercises. It has been customary to associate with this function the bestowal of some honorary degrees, and the spectators have found the whole proceedings somewhat dreary. It is now proposed to abolish the tedious recitations and to retain merely the actual distribution of prizes.

An interesting fixture for the October term is a meeting to be

held on December 4 in the Senate House, under the auspices of the Universities Mission to Central Africa, to commemorate the celebrated lecture delivered by Dr. Livingstone exactly fifty years before. We have several speakers who can do thorough justice to a theme such as this. The Bishop of Ely's appointment was the subject of comment in these notes more than a year ago; the prophecy then made has been amply fulfilled. The new Bishop has risen to his position and will prove himself a force to be reckoned with; the fresh responsibilities have given him fresh powers and his oratory will now make him a tower of strength in the House of Lords—if that august body is in existence when the necessary vacancy comes.

A propos of vacancies, the Readership of English Law is to be filled up shortly. The stipend is £300 a year, and the duties microscopic in quantity. Most of the unemployed in the various Inns of Court will probably apply.

Some new regulations are suggested for the Chancellor's Medal Examination, which will now be dissociated from the Examination for University Scholarships. The projected Medal Examination is to consist of four translation papers, two general papers of questions, and an English essay. There is no mention of composition, verse or prose, Latin or Greek.

The prospects for next term are comparatively bright. There are no burning questions looming in the near future. After a few weeks of hurried work, followed by as many of deliberate gaiety, we shall wander off to our various summer retreats to do a little work. Of all the mischievous innovations made during the past twenty-five years the most pernicious was the devotion of the May term to examinations. The last Long Vacation was the most valuable period of a man's preparation, when he could do a little in the way of digesting the crude matter put before him by lecturers and professors. Now examinations begin almost as soon as the men return to keep their term, and those who have to face the ordeal first are at any rate saved the irritation caused by seeing their luckier *confrères* engaged in the anxious task of "waiting for a list."

We won the Boat Race, and, if the writer of these notes may hazard an opinion, it is this—that the reform of Cambridge rowing began when Mr. W. Fletcher came from Oxford to help us. We may have known how to row, but he taught our men how to race. Another thing—a school training is a valuable factor in the making of a successful stroke.

The politicians have been very busy, both the Liberal and Conservative Clubs having imported speakers from the upper ranks of their parties. At the Carlton Club dinner Lord Hugh Cecil made a remark, peculiarly apposite as coming from one of his antecedents, that it was the great body of moderate opinion that ruled the country, though movements were due to the extremists on both sides.

London. A LETTER has been addressed to the President of the Board of Education by the Vice-Chancellor of the University of London, expressing satisfaction that, although it has not been found practicable to accept proposals for the immediate incorporation in the University of the new technological institution at South Kensington, the course of action proposed will tend to facilitate the accomplishment at an early date of the objects the Senate of the University has in view. The Senate fully appreciates the disadvantages which would attend any further delay in the establishment of the new college. The Vice-Chancellor expresses the hope that during the time before the appointment of the Royal Commission proposed by the President of the Board of Education the new governing body and the Senate may find themselves, as a result of friendly discussion, in a position to submit to the Board joint proposals for complete incorporation, and so avoid the need for a Commission.

The third term at University College will begin on April 23. This year, for the first time, there will be a Whitsuntide recess from Friday, May 17, at 2, to Wednesday, May 22, at 9.

The University College Committee have received with regret the news of the death of the late Sir Michael Foster, and have adopted the following resolution:—

The College Committee beg to express their sincere sympathy with Lady Foster and with the members of the family of the late Sir Michael Foster on the unexpected death of Sir Michael Foster, K.C.B., F.R.S., Fellow of the College. After a distinguished career as a pupil successively in the School, in the Faculty of Arts, and in the Faculty of Medicine, he became the first Professor of Practical Physiology and Histology in the College. Called away to Cambridge, where he took a large part in developing the Medical and Biological Schools of that University, as well as promoting in many ways the study of science, and especially of physiology, in this country, he retained his attachment for his *Alma Mater*, and recently was instrumental in obtaining valuable assistance towards the project of incorporation. His memory will ever be held in affectionate regard within these walls.

London—King's College. THE Council have issued an appeal for £125,000, the sum required for the incorporation of the College with the University of London: "£22,000 is needed to pay off the debt on the College, £37,000 to pay off the debt on King's College School, which will thereafter be placed under separate government, and £66,000 to form an endowment fund and enable the College to occupy the whole of its premises." A further sum of £20,000 is asked for the endowment of the Theological Department; and contributions will not go to this sum unless specially given for the purpose. Subscriptions should be sent to Walter Smith, Esq., Secretary, King's College, or to Messrs. Coutts & Co., Strand, to the credit of the Incorporation Fund account. The Goldsmiths' Company and the Clothworkers' Company have given £5,000 each.

The scheme of incorporation of the College with the University of London is now issued. The object proposed is (1) that King's College, so far as regards its University work in faculties other than that of Theology, should be incorporated with the University; (2) that the remaining institutions connected with it should be organized independently and be enabled efficiently to discharge their proper functions.

Manchester. THE Vice-Chancellor made a statement (March 14) as to the progress of the University. In the first place, somewhat of a change was taking place in the character of the University. Certain departments were taking a more prominent position. The most important feature was the increase in advanced work, of post-graduate and research work. It sometimes might be thought that, if numbers were not increasing while the expenditure did, something was wrong. This was not so. The point was that the higher work was more expensive. More rooms and more expensive appliances and apparatus were needed. He was glad to say that, when recently the University met the Inspectors appointed by the Treasury to consider the amount of grant to be made, this side of the University work was one put very prominently before them. He hoped it would be recognized all over the country that the University was not merely preparing men for professional and business life, but doing what it was possible to do in the way of adding to knowledge. Special attention was directed to the advancement of knowledge and research work. The Vice-Chancellor announced that in the allocation of the special grant the University would still hold its position of receiving the largest amount. It was found necessary also to be constantly making new developments, as new subjects claimed attention. They had, for instance, decided to establish a Lectureship in Experimental Psychology. It was not a subject in which they might expect a great number to take part, but it was one about which there was a concurrence of opinion that it was of vast importance. Another similar example of additional work undertaken in order to meet a demand for it was instruction in Celtic, and arrangements had been made for classes in Welsh and Irish. It had also been determined to offer instruction in Russian. There was much need for more room for laboratory work and for classes.

THE PRONUNCIATION OF LATIN.

REGULATIONS FOR SECONDARY SCHOOLS.

THE Board of Education have just issued a Circular (No. 555), in which they state that their attention has been constantly drawn, by the reports of their Inspectors and otherwise, to the very serious inconveniences that arise from the want of a common and fixed system of pronouncing Latin in schools. This want affects the efficiency and success of the teaching in many schools. In some the system in use is demonstrably erroneous, and in others there is no consistent system at all, or different systems are in use in different forms, with the result of much confusion, much needless labour, and positive encouragement to slovenliness and inaccuracy. In order to remedy these evils (the circular runs) it is necessary that a uniform system of pro-

nunciation should be adopted throughout the Latin classes in each school, and almost equally necessary that a common system should be adopted in all schools in which Latin is taught.

To effect this object the Board consider that the scheme of reformed pronunciation adopted by the Classical Association and approved by the Philological Societies of Oxford and Cambridge, the Head Masters' Conference, the Incorporated Association of Head Masters, and the Assistant Masters' Association should be brought into use in all schools recognized by the Board. The rules of this system (excluding certain unimportant or debatable points which hardly affect ordinary usage) are set forth at the end of the circular. In drawing the attention of governing bodies and of head masters and head mistresses to these rules, the Board request that steps may be taken to introduce them into practice without any avoidable delay. If the authorities of any school still prefer to adopt some other system of pronunciation, their scheme must be clearly explained when the curriculum is submitted to the Board. In no case can the use of any system be sanctioned in which proper attention is not given to quantity; in which, for instance, *pāter* is pronounced as *pāter*, *lĭcet* as *līcet*, *bŏnus* as *bōnus*. The Board's Inspectors are instructed to report carefully on this; and Latin will not be considered to be efficiently taught where quantity is ignored. No teacher can be considered qualified to teach Latin who is not acquainted with the rules of Latin quantity and with the structure of the common Latin metres. In view of these instructions, those members of the school staff who take part in the teaching of Latin should at once make themselves acquainted with the rules, which it is hoped will be in general use not later than the beginning of next school year.

Where the reformed system is adopted it is especially desirable that beginners should never hear any other pronunciation. Inspectors will accordingly inquire specially into the teaching of pronunciation in the lower forms. It will be left to the discretion of school authorities to determine whether it is desirable to change the pronunciation of those scholars who have already for some time been learning Latin on another system. But the Board have to point out that if, as seems likely, a standard pronunciation becomes within a few years practically universal, those who have not become used to it at school will be placed at some disadvantage. It is therefore very desirable that, even at the cost of some temporary additional effort, they should become accustomed to the use of the standard pronunciation while still learning Latin at school. It is also obvious that a teacher cannot use one pronunciation when teaching one class and another when teaching another class without great trouble and almost certain confusion.

MEETING OF THE COUNCIL OF THE COLLEGE OF PRECEPTORS.

A MEETING of the Council was held at the College, Bloomsbury Square, on March 16. Present: Mr. E. A. Butler, Vice-President, in the chair; Prof. Adams, Dr. Armitage-Smith, Mr. Barlet, Rev. Canon Bell, Rev. J. O. Bevan, Rev. J. B. Blomfield, Rev. A. W. Boulden, Mr. Chettle, Miss Dawes, Mr. Eve, Mr. Kelland, Dr. Maples, Dr. Moody, Mr. Pinches, Miss Punnett, Mr. Rule, Mr. Rushbrooke, Mr. Starbuck, Mr. Storr, and Mr. Vincent.

The minutes of the last meeting were read and confirmed.

The Secretary reported that the *Conversazione* held at the College on March 6 had been attended by about 350 members and their friends.

The Diploma of Licentiate was granted to Mr. H. Roberts, and that of Associate to Mr. A. Bechervaise, who had passed the required examinations.

The report of the Education Committee was adopted, and it was resolved: "That the Council rejoice in the prospect of the registration of teachers not being dropped. At the same time they would respectfully submit that it is desirable that (1) secondary teachers should be adequately represented on the Council mentioned in Clause 12 of the Bill, as they are on the existing Registration Council; and (2) the standard of attainments for admission to the Register should be kept as high as possible."

The following persons were elected members of the College:—

Miss A. M. C. Biddlecombe, 45 Aynhoe Road, Brook Green, W.
Mr. P. F. Lucas, L.C.P., The Grammar School, Eye, Suffolk.
Mr. T. J. H. W. Wyer, B.A., L.C.P., 22 Stanmore Road, Leytonstone, N.E.

The following books had been presented to the Library since the last meeting of the Council:—

By EDWARD ARNOLD.—Byles's Greek Lives from Plutarch.
By A. & C. BLACK.—Black's School Poetry (Song and Story, Books I., II., and III.), Melven's Scott's Talisman.
By BLACKIE & SON.—Bourdass' Weber's Le Petit Grand-père et la Petite Grand'-mère; Carlyle's Hero as Divinity and Hero as Man of Letters; Virgil's Georgics, Book IV.
By the CAMBRIDGE UNIVERSITY PRESS.—Edwards's Colloquia Latina, adapted from Erasmus.
By GINN & CO.—The New Hudson Shakespeare (As You Like It and The Merchant of Venice).
By G. PHILIP & SON.—Philips' Model Test Map of the British Isles, and Handy-Volume Atlas of the World; L'Estrange's Junior Course of Comparative Geography.
By RELFE BROS.—Perry's History of England, Vol. I.
By the UNIVERSITY TUTORIAL PRESS.—Norman's Systematic Practical Organic Chemistry; Watts's Shakespeare's Richard II.; Wyatt and Goggin's Anthology of English Verse.

CONVERSAZIONE AT THE COLLEGE OF PRECEPTORS.

A *Conversazione* of members of the College and their friends was held at the College on Wednesday evening, March 6, and was attended by a very numerous gathering.

The guests were received by Sir Philip Magnus, M.P., the senior Vice-President, and Lady Magnus.

Extensive preparations had been made to secure the comfort of the visitors, and the Committee had arranged a programme which included demonstrations of interesting scientific phenomena, an exhibition of glass blowing, and a vocal and instrumental concert, with recitations and musical sketches.

The ground floor was devoted to the scientific exhibits. In the members' room Prof. Herbert Jackson, of King's College, assisted by Mr. D. Northall Laurie, gave a series of experiments to illustrate the effects produced by electric discharges in high vacua when various phosphorescent materials were placed in the path of the discharge. After some examples of colours from ignited shells had been exhibited, the existence of a stream of particles coming from the negative electrode was demonstrated. For this purpose a tube containing two vanes of mica covered with phosphorescent powders was used. When the current was turned on the glowing vanes began to rotate, and soon were seen to be moving very rapidly. With specimens of lime and of zinc oxide prepared in special ways brilliant colours were displayed, and their different hues—such as red, orange, green, and blue—were explained as being related to variations in the complexity of the particles of the oxides shown. A beautiful example of lime giving an intensely deep blue phosphorescence illustrated the presence also of violet and ultra-violet rays in the light coming from the tube. These rays were revealed by the strong phosphorescence excited in a large tube of uranium glass held near the glowing lime. Special attention was called to the brilliancy of the illumination obtained from specimens of strontium oxide and of zinc silicate. It was explained that the amount of energy used up in producing the light was probably much less than that expended on any other known form of artificial illumination. The demonstrations concluded with an experiment designed to show the effect of rapid oscillations. A large bulb containing lime in a relatively low vacuum was made to act also as a Leyden jar. As soon as the oscillations were set up the jar became brilliantly phosphorescent, and glowed with a strong orange yellow light. The demonstrations were witnessed by a constant succession of delighted audiences, who crowded the room throughout the evening.

In the members' writing room demonstrations of the properties of liquid air were given by Mr. W. Campbell Brown, assisted by one of his pupils. The demonstrator stated that his object was less to give a scientific exposition of the subject than to exhibit a series of remarkable experiments. The very low temperature at which liquid air is produced enabled him to show the effect of extreme cold on several familiar substances. When placed in the liquid air a piece of elastic was frozen to such a state of brittleness that a smart blow with a hammer caused it to fly to pieces. A piece of raw meat similarly treated turned white in colour, and was pounded in a mortar; whilst a soft, juicy grape, on being immersed in the liquid, became so hard that it was with difficulty broken open with a hammer. When violets were exposed to the extreme cold the flowers and stalks could be crushed to a fine dust. With mercury—usually the most mobile and elusive of substances—a hammer was made of such a degree of hardness that with it nails could be driven into a block of wood. The effect of refrigeration on common whisky was very pretty, the water freezing first and forming white crystals, until later the whole mass solidified. Perhaps the most popular experiment, however, was an illustration of the use of liquid air as a motive power. When introduced into the boiler of a small model engine, the relatively great heat of the metal caused the liquid air to boil violently, when the vaporizing air performed the work of steam, and drove the motor at a rapid rate.

In the Secretary's office Mr. P. H. Johnson gave a succession

of demonstrations of the Photochromoscope, a form of optical lantern by means of which photographs of various subjects, chiefly still-life groups and flowers, are thrown upon the screen in their natural colours. This effect is obtained by superimposing three separate photographs of the various objects taken, one through a red glass, a second through a green, and a third through a bluish one. The lantern is so arranged that the light passes through the condenser and thence through those three photographs. It next traverses three coloured glasses, in each case the same as that through which the photograph was taken. Three pictures are thereby produced, answering more or less closely to the red, green, and blue colouring of the object originally photographed. These three pictures are then caused to coincide, with in many cases remarkably beautiful effects. The apparatus was lent by Messrs. Newton & Co., of Fleet Street.

In the adjoining room the Harmonograph, lent by Messrs. Newton & Co., was exhibited at work by Mr. J. Nicol. This instrument, which consists of two adjustable pendulums, draws curves resulting from the compounding of two simple harmonic vibrations. One of the pendulums, which can be arranged to swing either in one plane or as a conical pendulum, carries a table at its upper end, and the other, which swings in a plane at right angles to the first, moves a pen over a card carried on this table. The two pendulums are adjusted so that their times of swing are very nearly, but not quite, in a simple ratio. Consequently the figure traced by the pen gradually changes, and a closely interlacing pattern is formed. The curves produced were much admired.—In the same room Mr. S. Pinnion gave a demonstration of glass-blowing, the apparatus for which was supplied by Messrs. Townson & Mercer. These demonstrations were also exceedingly popular, and the room was crowded throughout the evening.

The concert in the lecture hall attracted throughout the evening a large and appreciative audience. Songs were sung by Miss Clara Evelyn, Miss Christian Keay, and Mr. C. G. Sadler, and pianoforte solos were played by Miss L. G. Polgreen, who also played the accompaniments. Musical sketches were given by Mr. Tom Clare, and recitations by Mr. Eric Williams.

The *Conversazione* concluded shortly after 11 o'clock.

COLLEGE OF PRECEPTORS.

PROFESSIONAL PRELIMINARY EXAMINATION—PASS LIST.

March, 1907.

The Supplementary Examination by the College of Preceptors for Certificates was held on the 5th, 6th, and 7th of March in London, and at nine other local centres, viz., Birmingham, Bristol, Cardiff, Leeds, Liverpool, Manchester, Newcastle-on-Tyne, Northam, Taunton. The following candidates obtained Certificates :—

First Class [or Senior].

Pass Division.

Cross, L. H. R. Gatley, C. A. R. *l.*
Hawkes, E. S. *a.f.*

Second Class [or Junior].

Honours Division.

Addenbrooke, R. G. *f.* Roberts, G. M. *l.*
Bridgman, R. O. *g.f.* Willis, C. H. *a.ge.*

Pass Division.

Alexander, C. B.
Baker, G.
Bendix, F. E.
Blakemore, W. H.
Burton, C. F.
Butler, H. O'N.
Carrington, V. C.
Clarke, H. R.
Clement, R. O.
Cooper, T. P.
Cox, P. R. *h.*
Craig, G. R.
Crawford, J. D.
Crouch, H. A. *f.l.*
Dancer, U. J. G.
Darlison, H. A.
Daunt, C. O'N.
Davis, A. H. *al.*
Dickin, E. S.
Durlacher, H. W.
Dye, W. H.
Esilman, A.
Farbrother, E. S.
Gibbons, L.
Gilbert, J. S.
Glaisby, L. N. *l.*
Godding, H. C.
Greaves, S. S.
Gregg, R. D. G.
Grylls, G.
Haedicke, C. R. W.
Hatch, H. C.
Hazell, W. S.
Hempson, G. O. *f.*
Hodgson, C. F.
Horsley, L.
Ingham, H.
Jenkinson, E.
King, J. H.
Kirk, D. C.
Knight, F. W.
Lea, L.
Lethaby-Morgan, B.
Luck, L.
Martin, C. W.
Mayman, B. R.
Morgan, W. L.
Morrey, C. A.
Morris, A. G. *l.*
Morris, C. D. *al.*
Norgate, R. C. H.
Osmer, T. S. *al.*
Paramore, W. J.
Parsons, J. G.
Peatfield, P. J.
Pegler, H. J.
Plummer, F. C. *l.*
Power, D'A.
Pritchard, G. P.
Ransford, L. G.
Rashbrook, S. O.
Rigg, H. C. *g.*
Roberts, E. R. *g.*
Robinson, J. A. W.
Salmon Backhouse, B.
Saunders, G. V.
Saunderson, A. E.
Scott, D. C.
Shoesmith, H. P.
Singleton, W. J.
Slaughter, C. A.
Soutter, J. S.
Spong, R. W.
Staddon, E. J. *l.*
Stuart, J. S.
Swire, F.
Thorne, D.
Topham, H.
Tresidder, C. T.
Tripp, J. E. H.
Utting, G. W. *a.*
Vaisey, N. C.
Vos, Miss D. E.
Webb, S. J. F.
Williams, E. R.
Williams, G.

N.B.—The small italic letters denote that the candidate to whose name they are attached was distinguished in the following subjects respectively :—

a = Arithmetic. *g* = Geography.
al = Algebra. *ge* = German.
f = French. *h* = History.
l = Latin.

PRACTICAL EXAMINATION FOR CERTIFICATES OF ABILITY TO TEACH.

The following is a list of successful candidates at the Examination held in February, 1907 :—

Class I.

West, Miss M. E.

Class II.

Cook, J. T. Rawlinson, C. S.
Naumann, Miss E. Wallace, Miss L. E. M.

CORRESPONDENCE.

[*We do not hold ourselves responsible for the opinions expressed by our correspondents.*—Ed. *E.T.*]

THE GREAT PUBLIC SCHOOLS.

An Explanation of their Popularity.

To the Editor of "The Educational Times."

Sir,—The Mandate microbe which has caused such marked loss of reasoning capacity in politics seems now to have attacked our Education Authorities. In the last elections John Smith voted for the Land Reform candidate, and is now vastly surprised to hear that he has given a mandate for the destruction of the House of Lords. In choosing our Parliamentary representative, the house we live in, or the school to which we send our son, we cannot get the things we desire without at the same time receiving those we do not want.

In your last issue I read: "The old public schools—Eton, Harrow, Winchester—are full to overflowing, and modern foundations framed on their model—Marlborough, Clifton, Haileybury—increase and prosper: this is the silent and sufficient answer of the great public, which 'judges more wisely and justly than all the connoisseurs.'" As a retired head master of a not unsuccessful preparatory school, will you allow me to state my experience?

As our parents placed their boys with us for the very purpose of their being prepared for the public schools, we very naturally heard their reasons. And the result left in my mind is that the education given in public schools was not the principal factor. The advantage sought was social rather than educational. Nor is this at once to be decried as snobbish. The same motive that causes a man to live in the West End rather than in West Ham sends his son to Eton in preference to Giggleswick. Many a time have we been asked to give less Greek and more German; often have we been requested to give a more modern education, and our sufficient answer has been—the entrance and scholarship examinations of the public schools. The parents of public-school boys have no more given a mandate for the public-school system of education than they have for their commissariat system. The parents will put up with untrained teachers, huge classes, an antiquated syllabus, and an indifferent table for the solid advantages of a tone and training, the making of friendships, and the social *entrée* which they believe they get there. *That* is the real mandate.—I am, Sir, &c., J. Vine Milne.

DIRECT MORAL INSTRUCTION.

A Challenge to Objectors.

To the Editor of "The Educational Times."

Sir,—Would you allow me, by means of your pages, to set before your readers, and before Prof. Findlay and Mr. Paton, a few questions on the subject of moral instruction? I feel nonplussed by certain criticisms that are constantly forthcoming whenever proposals are made in favour of direct moral instruction. I cannot trace the origin of these criticisms or discover that they have any psychological or scientific basis; and yet whenever the proposals of the Moral Instruction League are brought forward in scholastic circles these criticisms are forthcoming. My own impression is that they are the result of blind worship of an "idol of the market place" (the *educa-*

tional market place); in other words, of a floating prejudice against what is called "moralizing," or, in still other words, of a kind of inverted priggishness—a priggish fear of appearing priggish or of appearing to sanction priggishness. But that is only my own impression. There may be deep psychological grounds behind Prof. Findlay's attack on direct moral instruction (recently delivered in Manchester) and behind Mr. Paton's unfavourable comment at the College of Preceptors' meeting on November 14, 1906. All I can say is that I have never been able to discover any such grounds, and when, as at that meeting, I have asked: "Is there no intellectual element in good conduct, an element of *insight* capable of being imparted by direct instruction?" the critic has always remained silent. These, then, are my questions:

1. Do not scores of little offences against propriety, decency, and morals spring from *thoughtlessness*—from the fact that the nature of the offence has never been clearly and rationally pointed out? I refer to the many little things we notice, for example, when we travel (third class) in workmen's trains.

2. Do not many moral evils spring from sheer blindness, prejudice, moral ignorance?

3. Was Sidgwick wrong when he wrote: "The obstacles to right conduct . . . lie partly in the state of our intellect, partly in the state of our desires and will. Partly we know our duty imperfectly, partly our motives for acting up to what we know are not strong enough. . . . Let us suppose that our notion of justice suddenly became so clear . . . that every instructed person could at once see what justice required. . . . Undoubtedly, there would be much less injustice."

4. Are the Japanese people entirely wrong in establishing moral instruction in all their schools, and have the results been poor? [Mr. Paton, referring to this, pointed out that the reason for this subject being included in the Japanese curriculum was that the Japanese had no religious instruction. I do not quite see the point of the argument. It certainly does not prove the ineffectiveness or impossibility of moral instruction, even in this country.]

5. Is Kirkpatrick wrong in asserting ("Fundamentals of Child Study," page 195) that "formal statements and discussion of general principles of morality are often valuable as giving youths clearer and better standards of action"? And, if such "statements and discussions" are properly based (as the Moral Instruction League advocates) on historical and biographical materials, are they any more likely to be useless?

I am most anxious to sever my connexion with the Moral Instruction League if the principles of that organization are unsound. The worst of it is, all the "soundness" appears on the side of the League. No doubt Prof. Findlay and Mr. Paton can clear up my difficulty by means of a few *plain and direct answers* to the above questions.—I am, Sir, &c.,

F. H. Hayward.

87 Benthal Road, Stoke Newington, N.

EXAMINERS' REMARKS ON DIPLOMA PAPERS.

To the Editor of "The Educational Times."

Sir,—I think that the following propositions may be fairly deduced from the Examiners' remarks on the answers they received to the questions on Education set at the last Diploma Examination:—

First, that the full Diploma should not be granted till the candidate has passed a practical test in teaching. A regulation such as this would bring the College into line with the other bodies that examine in Education, and would enable the examiner to see more of the examinee, not only physically, but also mentally.

Second, that the College should recommend—*i.e.*, practically prescribe—yet more suitable reading than, for instance, a heavy translation of Lange's "Apperception," with its marvellous exposition of St. Paul's conversion. What seems to be required is a wider reading of simply expressed books that compel reflection, such as does that little work of real artistic merit by Prof. Lloyd Morgan.

Third, that the College should devise some means whereby the substance of the lectures in the Educational Courses held at the College may reach the assistants scattered in the provinces.

Alterations in the directions mentioned would be quite in harmony with the general aims and duties of the College.—I am, Sir, &c.,

W. Drayton Roberts.

Watford House, Folkestone,
March 3, 1907.

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Fixtures.

DR. J. J. FINDLAY will read a paper on "The Growth of Moral Experience in the Young" at the meeting of members of the College of Preceptors on April 17.

A course of six lessons on Voice Production, by W. A. Aikin, Esq., M.R.C.S., L.R.C.P., will commence on Friday, April 19.

* * *

M. L'ABBÉ MARGUERÉ will lecture on "Lamennais" to the Société Nationale des Professeurs de Français en Angleterre at the College of Preceptors on Saturday, April 28, at 4 p.m.

* * *

THE Barlow Lectures on Dante at the University of London, University College, will be delivered by the Barlow Lecturer, the Rev. E. Moore, D.D., on May 1, 2, 8, 9, 15, and 16.

* * *

THE London University Extension Board have arranged a Training Course for Lecturers, consisting of ten weekly meetings, on Monday evenings, from 6 till 8, and beginning on Monday, April 29, at 6 p.m. Four lectures on "The Art of Lecturing" will be given by Prof. John Adams, M.A., B.Sc., and four lectures and demonstrations on "The Management of the Voice," by H. H. Hulbert, B.A. Oxon., M.R.C.S., L.R.C.P., Lecturer on Voice Training at the London Day Training College and for the London County Council. These will be followed by four meetings for practical work in voice production and lecturing. Inclusive fee, £1. 10s. All the lectures and meetings for discussion and practice will be held in the University of London, Imperial Institute Road, South Kensington, S.W. Further particulars (with syllabus of lectures) from the Registrar of the University Extension Board.

* * *

AN influential committee has been formed to convene a Conference on the Teaching of Hygiene and Temperance in the universities and schools of the British Empire, to be held in London on St. George's Day, April 23.

* * *

THE Royal Sanitary Institute will hold examinations in Hygiene in its bearing on school life, and in other applications, at Worcester on April 5 and 6, at Dublin on April 12 and 13, and at Liverpool on April 26 and 27.

* * *

THE National Agricultural Examination Board announces that the eighth annual examination of candidates for the National Diploma in the Science and Practice of Agriculture will be held at the University of Leeds on May 6 and following days. Entries close on April 2. Forms, &c., from Mr. Thomas McRow, Secretary, Royal Agricultural Society of England, 16 Bedford Square, London, W.C., and Mr. James Macdonald, Secretary, Highland and Agricultural Society of Scotland, 3 George IV. Bridge, Edinburgh.

* * *

THE fourth International Congress of Mathematicians will be held at Rome on April 6–11, 1908. Membership fee, 25 francs; families of members, 15 francs each person.

Treasurer: Prof. Vincenzo Reina, 5 Piazza S. Pietro in Vincoli, Rome. Information as to Congress from the General Secretary of the Committee of Organization, Prof. G. Castelnuovo, 5 Piazza S. Pietro in Vincoli, Rome.

* * *

The London University Holiday Course for foreigners will be held from July 22 to August 26. Programme will be issued on May 1.

* * *

The Vacation Term for Biblical Study will be held this year at Newnham College, Cambridge, July 27 to August 17. Particulars from Miss Creighton, Hampton Court Palace.

* * *

The Education Committee of the West Riding County Council proposes to hold a fortnight's vacation course for teachers in secondary, technical, and elementary schools at the Municipal School, Scarborough, early in August. The aim is to give teachers "the opportunity of studying new methods of teaching the ordinary class subjects rather than to give specific instruction in the subjects." Particulars (ready early in May) from Mr. A. V. Houghton, County Hall, Wakefield.

A four weeks' course in handwork, organized by the Educational Handwork Association, will also be held at the School from July 27. Particulars from the Hon. Secretary of the Handwork Association, 47 Spring Street, Huddersfield.

* * *

The Board of Education has just issued a list of twenty-five holiday courses to be held on the Continent during the present year. Six of the courses are in Germany—Greifswald, Jena, Königsberg, Marburg, Neuwied, and Salzburg; four in Switzerland—Geneva, Lausanne, Neuchâtel, and Berne; one in Spain—Santander; and the rest in France—Besançon, Dijon, Grenoble, Nancy, Boulogne-sur-Mer, St. Servan-St. Malo, Paris, Tours, Honfleur, Bayeux, Granville, Caen, Lisieux, and Villerville. The paper issued by the Board of Education gives the date of each course, the fees, return fares from London, lowest cost of boarding, principal subjects of instruction, address of local secretary, and other details of importance to intending students. Copies free, on application to the Board of Education Library, St. Stephen's House, Cannon Row, London, S.W.

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The Teachers' Guild makes preliminary announcement of its Modern Languages Holiday Courses at Tours, Honfleur, Neuwied, and Santander. A handbook, giving full syllabuses and other particulars, may be obtained after May 1 (price 6d.) on application at the Office of the Guild, 74 Gower Street, W.C.

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Vacation Courses for foreigners will be held at the Lycée de Jeunes Filles de Versailles, August 5–24 and September 2–21. Apply to Mme. Kahn, Professeur agrégé au Lycée.

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The third Annual Holiday Course at Boulogne-sur-Mer, organized by the University of Lille in co-operation with the Alliance Française, will be held August 1 to 28. Detailed time-table ready July 1. Particulars from Prof. H. Bornecque, 70 rue de Turenne, Lille, or from Mrs. Yorke, The Priory, Midhurst.

Honours.

The Senate of Glasgow University have resolved to confer the following honorary degrees on April 23:—

LL.D.: The Prince of Wales; the Princess of Wales; the Lord Provost of Glasgow (William Bilsland); his Grace the Duke of Argyll; Right Hon. the Earl of Elgin and Kincardine; Right Hon. Earl Roberts; Right Hon. John Sinclair, Secretary for Scotland; Right Hon. H. H. Asquith, Lord Rector of Glasgow University; Right Hon. George Wyndham, formerly Lord Rector of Glasgow University; Sir John M. Stirling-Maxwell, Bart.; Alexander Ure, K.C., Solicitor-General; Sir George Watt, C.I.E.; Sir William R. Copland, President of the Glasgow and West of Scotland Technical College; her Grace the Duchess of Montrose; Miss Janet Ann Galloway, Secretary at Queen Margaret College, Glasgow; M. Emile Boutroux, Paris, formerly Gifford Lecturer in Glasgow University; John MacMillan Brown, formerly Professor of English, Canterbury College, Christchurch, New Zealand; John Norman Collie, Professor of Organic Chemistry, University College, London; Signor Ulisse Dini, Professor of Mathematics, University of Pisa; Prof. Adolf Harnack, Director of the Royal Library, Berlin; M. Jules Verni Poincaré, Professor of Mathematics and Astronomy, the Sorbonne, Paris; Sidney Lee, Litt.D.; D. S. MacColl, Keeper, Tate Gallery; James A. Reid, Dean of the Faculty of Procurators, Glasgow; George Gilbert Ramsay, Professor of Humanity in Glasgow University, 1863 to 1906; John Gray M'Kendrick, Professor of Physiology in Glasgow University, 1876 to 1906; Alexander Moody Stuart, Professor of Law in Glasgow University, 1887 to 1905; Principal Donald Macalister.

D.D.: Rev. Dugald Butler, Edinburgh; Rev. John Smith Carroll, Glasgow; Right Rev. Cosmo Gordon Lang, Bishop Suffragan of Stepney; Rev. William Page Roberts, Canon of Canterbury; Rev. Alex. M'Laren, Manchester; Rev. Ralph Wardlaw Thompson, Foreign Secretary of the London Missionary Society.

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The University of Oxford has conferred the degree of D.C.L. by diploma upon the Right Hon. Lord Curzon of Kedleston, Chancellor of the University.

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Dr. Schuster, late Langworthy Professor of Physics and Director of the Physical Laboratories, has been elected an Honorary Professor, of the University of Manchester.

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Mr. C. M. Doughty, the Arabian traveller and author of "Arabia Deserta" and other works, has been elected an Honorary Fellow of Gonville and Caius College, Cambridge.

Endowments and Benefactions.

The Goldsmiths' Company have promised the University of London £8,000—the sum necessary for the completion of the new wing of the Goldsmiths' College at New Cross.

They have also intimated their intention of providing a cabinet for the collection of engravings, portraits, &c., belonging to the Economic Library presented by them to the University in 1903, and such other furniture as may be found necessary.

* * *

The Drapers' Company have decided to continue their grant of £800 a year for the stipend of the Professor of Agriculture at Cambridge for another period of ten years.

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Oxford University appeals for £250,000—£100,000 for Science, £50,000 for additional buildings, £50,000 for the Bodleian, £30,000 for Modern Languages, and £20,000 for History.

* * *

Miss Mary Bateson, Fellow of Newnham College, has left the whole of her estate to the College—£8,561.

* * *

The University of London, University College, has received the following donations:—From the Drapers' Company, the sum of £200 for the completion of the Astronomical Equipment Fund; from the friends and students of the late Prof. Henry Morley, a replica of his portrait by his son, Mr. Robert Morley; and from Mr. Aders Plimmer, 500 copies of his "Senior Text-Book on Physiology" and 500 copies of his "Junior Text-Book;" the proceeds of the sale of which will be devoted to the Department of Physiology.

* * *

The University of Liverpool has received a bequest of the

late Mr. Francis William Webb founding a scholarship of £80 a year for 3 years, open to sons of employees of the London and North-Western Railway. The first competition will take place in May.

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BESIDES the bequests to the Universities of Oxford and Cambridge already recorded, Mr. Charles J. Oldham, F.R.C.S., left £10,000 to Corpus Christi College, Oxford, one third for scholarships in classics or for furthering classical study, and the rest for the advancement of general learning in the College; £3,000 to Manchester Grammar School; and £1,000 to the Royal Academy of Music; and the residue of his estate (say £15,000 to £20,000) to Corpus Christi College, Oxford, and Manchester Grammar School in equal shares.

Scholarships and Prizes.

PEMBROKE COLLEGE, OXFORD, offers 4 open classical scholarships. Examination May 14. Particulars from the Master.

* * *

RUSKIN COLLEGE, OXFORD, offers a free scholarship to a member of the South Wales Miners' Federation. Apply to Mr. T. I. Jones, 46 Fountain Street, Ferndale, Glamorgan.

* * *

THE next combined examination for 66 entrance scholarships and various exhibitions at Pembroke, Gonville and Caius, King's, Jesus, Christ's, St. John's, and Emmanuel Colleges, Cambridge, will be held on December 3 and following days. Candidates must be under 19 on October 1. Forms of application, with usual certificates, to be returned by November 26.

* * *

GONVILLE AND CAIUS COLLEGE, CAMBRIDGE, offers a research studentship in economics, £120 for one year, with conditional extension to two years, in June next. Age 21 to 25 on October 1, 1907. No competition: candidates to send evidence of capacity for economic research, with usual certificates of birth and character. Apply to the Master by June 1.

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JESUS COLLEGE, CAMBRIDGE, offers for competition (June 18) two choral exhibitions, £30 each for 3 years. Particulars from Mr. Arthur Gray, Senior Tutor.

* * *

A COMBINED examination for entrance scholarships and exhibitions tenable at University College, King's College, and the East London College will be held in London by the London Inter-Collegiate Scholarships Board on Tuesday, May 14, 1907, and following days. Apply to the Secretary of the Board, University College, Gower Street, W.C., for forms of entry, which have to be returned by May 1, together with certificates of age and good conduct.

* * *

ONE Tancred Studentship in Law, about £63 a year, tenable till call to the Bar and for 3 years more, will be open at Whitsuntide. Age 19 to 23; unmarried; "of the religion of the Church of England." Forms of petition, &c., from J. W. Corrie Frere, Esq., 28 Lincoln's Inn Fields, London, W.C.

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THE Board of Education has issued the regulations for the competitions for Royal Exhibitions (£50 a session and free instruction for 3 years; 7 open every year), National Scholarships (25s. a week for the session of about 40 weeks, and free instruction for 3 years; 22 open every year), and free studentships (free instruction for 3 years; 6 open every year)—all in Science subjects. Forms to be returned by April 15, April 28, and June 15.

BOLTON Education Committee has approved a scheme of scholarships founded by Mrs. Thomasson and Mr. Franklin Thomasson, M.P., some £800 a year for 6 years, tenable at a university and at Bolton secondary schools, and for post-graduate work, including foreign travel.

Appointments and Vacancies.

THE Right Hon. Lord Curzon of Kedleston, Hon. D.C.L., &c., has been elected Chancellor of the University of Oxford, in succession to Lord Goschen, by 1,101 votes against 440 polled for Lord Rosebery.

* * *

THE DUKE OF DEVONSHIRE has been elected Chancellor of the University of Manchester, in succession to Lord Spencer. The Duke's father was the first Chancellor.

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PROF. M. E. SADLER, we understand, will not accept the Presidentship of the University of Toronto.

* * *

THE REV. HERBERT EDWARD DOUGLAS BLAKISTON, B.D., Fellow, Bursar, and Senior Tutor of Trinity College, Oxford, has been elected President of the Society, in succession to the late Prof. Pelham.

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THE REV. W. R. INGE, M.A. Cantab., D.D. Oxon. and Aberd., Vicar of All Saints', Ennismore Gardens, London, W., formerly Fellow of King's College, Cambridge (1886–88), and afterwards Fellow and Tutor of Hertford College, Oxford (1889–94), has been appointed Lady Margaret Professor of Divinity in Cambridge University.

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PROF. MIDDLETON is resigning the Chair of Agriculture in Cambridge University for the Assistant-Secretaryship of the Board of Agriculture and Fisheries.

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MR. W. H. WOODWARD, Professor of Education in Liverpool University and Principal of the University Training College for Elementary Teachers, has resigned and will retire in September next.

* * *

THE REV. E. GRIFFITH JONES, B.A. Lond., of Balham, has accepted the Principalship of the Yorkshire United Independent College, Bradford, in succession to the Rev. D. W. Simon, D.D., who will retire in June next.

* * *

AT the University of London, University College, Mr. W. J. Goudie has been appointed Assistant in the Department of Mechanical Engineering, in succession to Mr. E. M. Eden, who has been appointed Lecturer in Mechanical Engineering in the Armstrong College, Newcastle-on-Tyne; Mr. F. L. Richardson, of King's College, Cambridge, has been appointed Assistant in the Department of Applied Mathematics; and Mr. C. G. Eden Demonstrator in the Department of Mechanical Engineering, for the current session.

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AT Manchester University Mr. C. G. Hewitt has been appointed Lecturer in Economic Zoology; Mr. T. C. Eastwood, Barrister-at-Law, Lecturer in Conveyancing; Mr. H. Simms, Lecturer in Dental Materia Medica; and Mr. H. Heap, Assistant Lecturer in Sanitary Chemistry. Arrangements have been made for instruction in Russian next session.

* * *

DR. COBBETT, Professor of Pathology in Sheffield University, has been appointed Lecturer in Bacteriology in

Cambridge University. He is succeeded by Dr. J. M. Beattie, Senior Assistant to the Professor of Pathology in Edinburgh University.

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Dr. H. T. Barnes, Assistant Professor of Physics, has been appointed Professor of Experimental Physics, in McGill University, Montreal, in succession to Prof. Rutherford.

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Mr. W. Spens, B.A., Scholar of King's College, Cambridge, has been appointed Director of Science Studies at Corpus Christi College, Cambridge, and Fellow of the College.

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Mr. Harold Hilton, M.A., Fellow of Magdalen College, Oxford, Lecturer in Mathematics, University College, Bangor, has been appointed Lecturer in Mathematics at Bedford College for Women, in succession to Mr. P. J. Harding, M.A., resigned.

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Mr. F. W. Rixon, M.Sc. Man., Ph.D. Giess., Science Instructor to the Devonshire County Council, has been appointed Professor of Chemistry in the Merchant Venturers' Technical College, Bristol.

* * *

Mr. Lees Smith, M.A., has been appointed to the newly established Chair of Public Administration and Economics at University College, Bristol.

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Dr. G. S. Graham-Smith has been appointed University Lecturer in Hygiene at Cambridge University for five years.

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At University College, Cardiff, Mr. G. Ambrose Williams has been appointed Student-Demonstrator in the Department of Anatomy; and Miss Woutrina A. Bone Assistant-Lecturer in Education in the Women's Department.

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Miss Lilian Mary Faithfull, Vice-Principal of the Women's Department of King's College, London, has been appointed Principal of the Cheltenham Ladies' College.

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The Head Mastership of Tonbridge School is vacant.

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Mr. T. F. Rutter, B.Sc. Lond., Ph.D. Leip., formerly Head Master of the Verdin Technical School, Winford, has been appointed Head Master of the Newcastle-under-Lyme Endowed School.

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Mr. F. J. Weaver, M.A. Lond., F.R.Hist.S., Head Master's Assistant, Aske's School, Hampstead, has been appointed Head Master of Braintree High School.

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Mr. E. A. J. Marsh, M.A. Lond., has been appointed classical master at the Hanley Secondary School.

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Mr. J. A. Cooper, B.Sc. Lond., F.R.G.S., senior mathematical master, Widnes Secondary School, has been appointed Principal of the Widnes Municipal Day Secondary and Technical School and Pupil-Teacher Centre.

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The *A.M.A.* records the following transfers of assistant masters:—Mr. C. H. Broadbent, Christ's College, Brecon, to Grammar School, Bradford; Mr. G. R. Davies, Grammar School, Hastings, to Grammar School, Retford; Rev. W. H. Hodges, Merchant Taylors' School, to St. Lawrence College, St. Lawrence-on-Sea; Mr. E. W. Jefferys, Grammar School, Haverfordwest, to Durham School; Mr. E. F. J. Le Sage, Colston School, Bristol, to Wreight's School, Faversham; Mr. E. E. Sly, Sir T. Rich's School, Gloucester, to Yardley Secondary School, Birmingham; Mr. C. H. Tacchella, Almondbury Grammar School, Huddersfield, to Abbey School, Beckenham; and Mr. H. M. Wilkinson, Giggleswick School, to Durham School.

Literary Items.

Mr. Murray announces early in autumn "The Letters of Queen Victoria"—a selection from Her Majesty's correspondence between the years 1837 and 1861—in three volumes, edited by Mr. A. C. Benson, M.A., and Viscount Esher, G.C.V.O., K.C.B. There will be about 40 illustrations, mainly photogravure portraits.

* * *

Mr. Henry Frowde announces "The Student's Series of Historical and Comparative Grammars," in some 25 volumes, under the general editorship of Dr. Joseph Wright, Professor of Comparative Philology in the University of Oxford. Two volumes—one dealing with phonology, morphology, and inflexions, and the other with syntax—will be devoted to Latin, Greek, French, German, English, and Welsh. One volume will be devoted to each of the following languages and periods of languages:—Sanskrit, Old Irish, Breton, Old French and Provençal, Old and Middle High German, Gothic, Old Icelandic, Old Saxon, Old English, Middle English, Old Italic dialects, Old Greek dialects, and Modern English dialects. Vol. I. of the "Historical German Grammar" will be published during this month, and two or three other volumes of the series will be ready by the end of the year.

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The Oxford University Press will publish this month the fifth and final volume of "Plato" in the "Oxford Classical Texts," edited by Prof. Burnet. The Press will also have ready the "Australasia" volume of "Historical Geography of the British Colonies," by J. J. Rogers, and the "Senior Geography," the third volume of Dr. A. J. Herbertson's "Oxford Geographies."

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Messrs. George Philip & Son will shortly issue a third and revised edition of Miss Nellie Dale's manual "On the Teaching of English Reading," which has hitherto been published by Messrs. J. M. Dent & Co.

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The Secretary of State for India has appointed Mr. T. Fisher Unwin agent for the sale of the publications of the Indian Governments.

* * *

Messrs. Chatto & Windus announce a series of "The Shakespearian Classics"—reprints of the sources used by Shakespeare in his plays—forming a section of "The Shakespearian Library" and extending to a dozen or more volumes. Prof. Gollancz is the general editor.

* * *

Mr. Andrew Lang is editing for Messrs. Jack "Poets' Country"—treating of the various places in Britain associated with the poets, and tracing their indebtedness to their natural environment. The book will contain a fine series of reproductions from coloured drawings by Mr. F. S. Walker. It will be issued in May.

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Messrs. Gurney & Jackson will publish presently a new

and enlarged edition of Mr. Abel Chapman's work, "Bird Life of the Borders," with additional illustrations.

General.

It is proposed to endow a Research Professorship at the Liverpool School of Tropical Medicine in memory of Dr. J. E. Dutton, who died at Kasongo on the Congo in 1905 from tick fever, contracted during study of the disease. Subscriptions to Mr. A. H. Milne, Hon. Secretary, Liverpool School of Tropical Medicine.

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A committee of non-residents has been formed to present to the University of Cambridge a replica of the statue by Mr. W. Goscombe John, A.R.A., of the late Duke of Devonshire, Chancellor of the University. Subscriptions to Parr's Bank, 1 Cavendish Square, W.

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The Council of the University of Liverpool has recommended the creation of a Chair of Experimental and Pathological Cytology, with a special view to research work in relation to cancer and similar diseases.

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Sir Philip Magnus, M.P., is actively engaged in the inquiry he has undertaken for the Cardiff Education Authority with reference to possible improvements in the technical instruction and other branches of education in the city.

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The National Museum of Wales has at last obtained its charter of incorporation.

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The Society of British Composers (309 Oxford Street, W.) invites subscriptions for a suitable memorial to the late Sir August Manns.

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A free class in Esperanto meets every Wednesday at 8 p.m. in the Lecture Hall attached to the Borough Reference Library, Bancroft Road, Mile End Road, E.

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Plans and particulars of land for the erection of the new Solar Physics Observatory at Hindhead have been placed before the Minister of Education.

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Aarhuus, the capital of Jutland, has revived its claim to a new university equal to the University of Copenhagen.

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A movement is on foot for the establishment of a college for young English Roman Catholic ladies at Cambridge.

CONFÉRENCES FRANÇAISES.

Société Nationale des Professeurs de Français en Angleterre.

BARBEY D'AUREVILLY.

Le 23 février, M. A. Noblet a fait, sous la présidence de M. Minssen, une conférence sur Barbey d'Aurevilly, et analysé une de ses œuvres—"Le Chevalier des Touches."

Barbey d'Aurevilly est une des plus intéressantes figures du romantisme. Dans une œuvre comprenant environ quarante volumes, il a constamment fait preuve de génie et d'originalité. Cependant, en dépit de son art réel, et peut-être à cause de son originalité, il est devenu, comme l'écrit excellemment M. Bourget, son disciple, un "génie sans gloire," et n'a que de rares lecteurs.

Né en 1808, et fils d'un père taciturne comme l'était celui de Chateaubriand, il appartient à une famille normande dont la noblesse remonte à 1765. Après avoir fait ses études au collège Stanislas, où il recontra Maurice de Guérin, qui devait longtemps être son plus fidèle ami, il voulut embrasser la carrière des armes, mais se heurta contre le refus formel de son père. Ne pouvant, à cause de sa jeunesse, suivre les volontaires qui allaient combattre pour l'indépendance de la Grèce, il écrivit son "Ode," où il glorifie les Hellènes et leur pays. Cette œuvre fut dédiée à Casimir Delavigne et publiée en 1825 avec une lettre de l'auteur des "Messéniennes." Envoyé à Caen pour y faire son droit, Barbey d'Aurevilly y fonda une revue qui n'eut jamais qu'un seul numéro.

Fatigué de la vie de province, il alla chercher fortune à Paris, affichant de plus en plus des idées libérales qui faisaient le désespoir de son père, et supprimant même la deuxième partie de son nom. Jusqu'en 1847, ce fut vraiment un déraciné affectant de se moquer et de la province et des provinciaux tout comme Flaubert se moquait des bourgeois. Mais soudain il change; après avoir été d'nn catholicisme douteux, nous le retrouvons à la tête d'une société et d'une revue catholiques; il reprend la deuxième partie de son nom et se sent attiré vers le pays natal.

Il avait voyagé, jusque-là, comme Th. Gautier, dans un monde irréel sorti de rêveries romantiques; mais, comme à M. de Perey, "la Normandie lui était soudain repassée par le souvenir, parée du charme des jours évanouis." Quand ses loisirs et les occasions le lui permettaient, Gautier s'enfuyait en Espagne; Barbey d'Aurevilly se contente de venir se retremper au terroir. C'est alors que le déraciné s'écrie: "Quand ils disent de partout que les nationalités décampent, plantons-nous hardiment comme des Termes sur la porte du pays d'où nous sommes, et n'en bougeons pas." Il puise alors ses inspirations dans l'histoire de la Normandie, publie en 1852 l'"Ensorcelée," et raconte en 1864 dans le "Chevalier des Touches" un épisode de l'arrière-chouannerie normande.

Le conférencier parle alors du caractère de Jules Barbey. Il cite plusieurs anecdotes où l'on trouve un homme "bâti sur orgueil," un dandy qui veut se faire admirer et qui trouve lâche de se rendre devant la vieillesse. Il nous fait voir son amour du panache et son individualisme qui peut se résumer par les derniers mots de Barbey d'Aurevilly lui-même à son lit de mort: "Je ne veux personne à mon enterrement."

"Le Chevalier des Touches," nous dit ensuite le conférencier, est celui des romans de Jules Barbey qui semble devoir vivre le plus longtemps. Il se compose de deux parties bien distinctes: une histoire de guerre et une histoire d'amour.

Le Chevalier des Touches est un des derniers partisans qui, vers 1799, combattaient encore pour la cause des Bourbons. A la faveur de la brume il traverse la Manche à plusieurs reprises pour venir en Angleterre chercher les dépêches. Les Bleus qui le traquent s'emparent un jour de lui. On l'enferme à Avranches, et douze hommes résolus se mettent en route pour le délivrer. Ils échouent, et ne s'échappent qu'à la faveur d'un incendie. Le prisonnier est transféré à la prison de Coutances, d'où les "Douze," parmi lesquels se trouve une femme, réussissent enfin à l'enlever. Un homme meurt dans cette expédition, et la mort de M. Jacques laisse Mlle Aimée de Spens "vierge-veuve." Quand nous la rencontrons, presque sourde, elle est encore fidèle à cet amour que le temps n'a pu amoindrir.

Le conférencier esquisse le caractère de chacun des héros du roman, et termine en montrant que, par son œuvre toute normande, où se retrouvent des tendances romantiques et réalistes, Barbey d'Aurevilly a créé en France le véritable roman du terroir.

Au cour de sa conférence, M. A. Noblet nous a lu une nouvelle—moitié prose, moitié vers—dont il est l'auteur. Il nous y dépeint la vieillesse de l'un des principaux personnages du "Chevalier des Touches"—Mlle Aimée de Spens,—la "vierge-veuve"—qui, avant de mourir, a la suprême consolation, en repensant à toute sa vie, d'entendre M. Jacques, son fiancé, lui murmurer d'une voix presque éteinte:—

Je vais te dire adieu! je meurs, ma bien-aimée!
Ma paupière tantôt sera lourde et fermée;
Il faut se résigner puisqu'il n'est plus d'espoir,
Mais je t'aime aujourd'hui comme en le premier soir!
Oh, mon ambition n'était pourtant pas grande,
Je n'avais jamais fait d'impossible demande,
Puisque je ne trouvais rien qui fût aussi doux
Que de passer une heure assis à tes genoux.
Dans l'ouragan fatal, vois-tu, ma chère amie,
Notre amour délicat n'était qu'une accalmie,
Et les yeux éblouis du rêve dont je sors,
Pour en faire un plus long, cette fois, je m'endors;
Ma paupière tantôt sera lourde et fermée. . . .
Adieu! voici la fin, je meurs, ma bien-aimée!

THE USE OF MYTHS WITH CHILDREN.

By Grace Rossman Boone, Montclair, N.J.

[From *Education* (Boston, U.S.A.).]

"It is the books we read before middle life that do most to mould our characters and influence our lives"; and quite as true is it that upon the kind of story told to children depends largely their later taste in literature and art. Mothers and teachere sometimes do not realize that children who are given weak tawdry stories and senseless jangling verse during the formative period of childhood cannot, at the age of ten or twelve years, suddenly develop a healthy taste for the best and noblest things, any more than the children brought up on sweets and desserts can take a healthy delight in the vigorous games and sports of a normal child.

Within the last decade hundreds of writers of children's stories and verses have come before the public: some of them doing solid intelligent work, bringing the old myths and legends and historical romances within the grasp of children; but the greater part of them only help to swell the "overwhelming flood of trash" with which our book shops are deluged. And when one thinks of the thousands of busy mothers and inexperienced teachers turned adrift on such a sea of worthless books, perhaps not seriously impressed with how grave a duty is this selection of intellectual meat for their little folk, one feels impelled to urge with all earnestness the use of the old stories and myths that have come down to us through the centuries—simple, grand old songs, interpretative of the beautiful and useful in Nature, of the high and noble impulses of the heart, and of the right in human intercourse.

How much richer the life and broader the interests of a child who can see in the oak and the linden the hospitality of old Philemon and Baucis, who can hear in the echo the voice of the irrepressible handmaiden of Hera, who can feel in the winds the breath of Æolus, and who finds in the dew on the grass blades the tears of the sorrowing Aurora!

Nature Myths.

The flowers, the trees, the sky, the water, animal life, the simple, everyday things of the child's early years, all teem with a wealth of legend and myth. So many beautiful myths centre around the phenomena of day and night, the seasons, the planting and harvest times: Phœbus Apollo and his perilous trip across the sky: Phaethon, the wilful son, and his disaster; Aurora, "the rosy-fingered daughter of the dawn," and her opening of the gates of Day and Night; Diana, guardian of the Night, and her trip through the heavens accompanied by her handmaidens; Apollo and his battle with Niobe and her children, who are the powers of Winter; Ceres and her search for Proserpina; Adonis.

Mythological interpretation of the sterner aspects of Nature tend to rob these phenomena of half their terror. Jove, flashing forth the lightning with his powerful thunderbolts; Thor and his wonderful hammer, personifying the thunder; Neptune, striking the waves with his trident and calling up the storms; Æolus, unloosing his sons, the Winds; Iris, the messenger of Hera, carrying messages from the gods to mortals along the brilliant pathway of the rainbow—imbue these phases of Nature with simplicity and interest, and make later scientific explanations easy and natural. Many of the flowers and trees have charming myths concerning them, which serve to enhance their beauty and give them a more personal significance. The sunflower appears no longer a coarse common flower when the child knows it as the apotheosis of the sea nymph Clytie. The once arrogant aspen, now quivering in every leaf because of the curse pronounced against her by the Infant Christ during the Flight into Egypt, furnishes another delightful legend.

Further instances of trees and smaller plants being animated by human souls are found in the laurel, the metamorphosed Daphne; in the myrtle tree, Myrrha; in the hyacinth and narcissus; in the cocoa palm, which sprang from the head of Tura; and in the larch, sacred to the Heliades, sisters of Phaethon.

The myths accounting for the formation and colour and habits of beasts, birds, and fishes form another interesting group: Arachne, punished for her pride by being turned into a spider; Hero and the faithful Leander saved from the Hellespont and converted into swans; the baker's daughter, who behaved rudely to our Lord and was changed into the owl, "a bird that looks not on the sun"; the selfish herdsmen transformed to frogs by Latona; the sorrowing Halcyone and her husband reunited in the guise of kingfishers; the preservation of the Argus eyes in the peacocks' tails; decrepit Tithonus changed to a grasshopper; the inventor Perdix, saved from his jealous uncle by Minerva and turned into a partridge; the benevolent Hierax persecuted by Poseidon and translated to a hawk; the young Chippeway brave who sought to escape the cruelty of his father and took on the shape of the red robin—are suggestive of some of the material available.

Thus far only myths that have to do with Nature have been mentioned; myths of the sense world in which the child lives during his early years; myths interpretative of the common experiences of his daily existence, and inspiring in him a closer observation and greater love for Nature.

Legendary Stories.

Later, when the child begins to work over the "old items" of the sense world into "new wholes," and to produce mental pictures different from anything he has ever seen, or perhaps unlike anything that exists, then is the time to enrich the resources of his imagination with such legends as the Labours of Hercules, the Nibelungen Lied, the wonderful feats of Jason, Perseus, Theseus, Ulysses, St. George, the Dog Gellert, Cadmus and the Dragon's Teeth, Beowulf, and Samson. And very early in this study of legendary heroes and historic adventures there should commence a gradual growth into the more ethical and historical consideration of myths; finally taking up such characters as Pandora, Prometheus, Cupid and Psyche, Æneas, Loki, Deucalion and Pyrrha, and the stories from the Bible.

Different View Points.

The lines dividing the myths into periods, however, cannot be drawn hard and fast; for many of the myths have several view points, and may be made to serve as many different purposes. It does not matter so much what particular myth is selected, but rather how it is treated, and what is the object desired in its presentation. Take the story of Arachne, for instance: that will admit of various interpretations. It may be used with very young children as a Nature myth, explaining in an interestingly dramatic way the origin of the spider and its peculiar characteristics. Used with other children, however, and emphasis being laid on Arachne's pride and wilfulness, the same myth can be just as profitably employed to accomplish an ethical lesson. The same story with grammar grade pupils might also be treated as a bit of historical material, showing how early man blended his religion and the Nature world.

In order to show more clearly how a single myth may be adapted to the various periods of a child's development, let us take one and treat it from these different view points. The plural nature of such myths as Pandora, Arachne, Philemon and Baucis, Niobe, and the like is so evident that it would be well perhaps to choose for this discussion one of the less obvious sort, as the story of Orpheus and Eurydice.

Orpheus and Eurydice.

This is the story: In early times, long before the Thracians became a cruel, warlike nation, there lived among them the celebrated poet and singer Orpheus. He was the son of the god Apollo and the muse Calliope. From both his father and his mother he inherited great personal beauty and love for music. His father gave him a lyre with golden strings, and taught him to play most skilfully upon it, and his mother endowed him with her wonderful gift of poetry and song.

When he played upon his lyre and sang his beautiful songs of love and happiness all the voices of Nature became silent. The winds would hush, the rivers would stay their course, the trees would bow down from their heights, the flowers would lift their lovely heads, the birds, the wild beasts, even the fish in the streams, would gather around him to listen to his strains.

He accompanied the Argonauts on their expedition, and helped them to pass the dread Sirens of Sicily by holding their attention with the unsurpassable sweetness of his music. Shortly after his return to Thrace from the Argonautic expedition he fell in love with the beautiful nymph Eurydice, and wooed her with soft, tender music. She was greatly touched by his great love and by his exquisite music, and consented to become his bride.

When they had been married but a short time a sad accident befell Eurydice. She was walking alone one day through the fields, and met a youth named Aristæus, who showed such bold admiration of the nymph that she was much displeased, and ran away as fast as she could. In her flight she accidentally trod

upon a snake, coiled up in the long grass, which, angered, turned upon her and bit her in the heel.

The beloved Eurydice died, and her spirit was conducted down into the gloomy realms of Pluto. Orpheus was broken-hearted. For a time he was so wretched that he could not play upon his golden lyre, or open his lips to sing; and, finally, when he did turn to his music to comfort him in his grief, the strains were so plaintive and the words so mournful that all Nature became sad. The glorious sun drew a heavy cloud about him, the brooks sighed in sympathy, the flowers bent their gentle heads and their eyes filled with tears, and even the trees took on a sombre hue.

At last the gods of Olympus heard his lamentations and were moved to pity by his great sorrow. Mercury, the winged messenger, was despatched to earth to announce to Orpheus that he had Jupiter's permission to seek his loved bride in Hades.

No mortal had ever yet penetrated to the dark fastnesses of Pluto, and the undertaking seemed hopeless: nevertheless, Orpheus was not daunted. He took up his lyre, and, directed by Mercury, hastened to the entrance of Hades. He had scarcely commenced his descent before he encountered Cerberus, the terrible three-headed dog that guards the portals of Hades. As soon as this monster saw Orpheus, he began to snarl and growl and crouch ready for a spring. But Orpheus was not frightened away: he took his lyre and drew from its strings such exquisite music that the dog was soothed and quieted and licked his feet, and let him pass through the great gate, which had opened of its own accord.

Thus encouraged, Orpheus hastened on, the magic sounds of his song penetrating to the remotest depths of Hades, even to terrible Tartarus, where the condemned souls under the spell of his wonderful music forgot their torments and ceased from suffering. At last he came before the throne of Pluto and saw the gloomy ruler of the Lower World with his wife, the fair Proserpina, beside him and the relentless Fates at his feet. Summoning all his power and skill, Orpheus poured forth before these stern judges the story of his heart, of his great love for Eurydice, of her cruel death and his inconsolable grief. And so sad was his song and so beautiful the music that the King and Queen were moved to tears and graciously consented to restore Eurydice to life, but upon one condition only, and that was that he should not look once into his beloved wife's face until they had crossed the threshold into the outer world.

Orpheus accepted the condition joyfully, and, happy in the thought of soon being reunited to his loved one, eagerly began his journey back to earth. He retraced his steps, looking neither to the right nor to the left, but ever straight before him. From time to time he strained his ear to catch some rustle or hint of movement behind him, so anxious was he to be assured that Eurydice was really following him. At last, just as they were at the very gateway into the upper world, his great love and the longing to look into her dear face overcame his prudence, and, unmindful of the condition imposed by Pluto, he turned. He beheld only the vanishing form of his wife as she was borne back to the realm of shades.

All was over now. No hope remained. In despair the lonely singer hid himself away in the forest solitudes, and there lamented his loss in

> Such strains as would have won the ear
> Of Pluto, to have quite set free
> His half-regained Eurydice.

Modes of Treatment.

As the above myth is told it will admit of manifold treatments:

1. With primary children it can be used advantageously in connexion with their music or picture study to emphasize the power and beauty of music.

To show how much a primary child will get from such a narration of this legend the following reproduction is included. This was written by a child eight years of age, and evinces very clearly upon what points the narrator laid most stress:—

"The Greeks say that Orpheus was a handsome youth. He was the son of Apollo and he loved music. Apollo gave him a lyre. He played such beautiful music that the flowers and everything stayed still to listen.

"When his wife, Eurydice, died nothing could comfort him. One day he went out on a mountain and played such sad music that the mountain bent down to listen, and all the gods in Olympus were sad. Jupiter sent Mercury to tell Orpheus to hunt for Eurydice in Hades. With his music he charmed the guard of Hades, Cerberus, the three-headed dog. The dog lay down and licked his feet and let him pass.

"He sang his story to Pluto, and was told that he could have Eurydice for his wife again out of Hades if he would lead the way and not look around until she had passed the gates of Hades. He walked along, and just as he had gotten through the gate he turned to see if she was following. She was, but she disappeared because she was not through the gate and he never saw her again."

2. This same myth might also be employed very profitably with fifth or sixth grade pupils. It could then be treated ethically as a bit of character study. The ideas to be gained would be faith and trust and the confidence in ideas and institutions that impels one to do earnestly whatever falls to one's lot, even when one cannot perceive the underlying purpose and wisdom of such action.

3. To a seventh or eighth grade pupil the story of Eurydice will be interesting for its historical significance. He will read in it the record of man's early effort to explain natural phenomena and spiritual sensations. Eurydice then becomes one of the many names of dawn, on whose death, when stung by the serpent of night, Orpheus, the sun, descends to seek her in the regions below the earth and brings her up behind himself in the morning, only to destroy her by his brightness when he turns to look upon her.

Considerations determining Treatment.

But, whatever the myth selected and whatever the grade in which it is used, its treatment will always be determined by the purpose the teacher wishes to accomplish and will be entirely dependent upon the child's needs and experiences.

Its connexion with the other subjects in the curriculum is also an important consideration. The teaching of a myth for its own sake alone is certainly not the highest use of such suggestive material. Cut off from the rest of the school work the myth may exert a distracting influence, but when correlated with it becomes a means of concentrating the attention and energy.

The Tyrolean legend of the origin of flax will serve to illustrate this many-sidedness of myths and their adaptability to the various other studies of the child. This story, used as a character study in a reading or language lesson, may be correlated with the study of plant life in science, or with the consideration of raw products in geography, or in history it affords a poetic explanation of the beginning of one of Europe's greatest industries. To use a myth primarily for a reading or language lesson would not be very purposeful. The most important use of myths at any time is to furnish thought food for that particular period of the child's development.

Advantages of Myths and Legends.

These poems and songs of early civilizations have many advantages over the modern stories written for children.

1. They are the very purest and highest kind of art, as their age, their loftiness of feeling, and simplicity of theme attest. They were the expressions of spirits in close touch with Nature, and for that reason hold just as much interest for the American or Chinese child of to-day as for the Greek or Norse youth of centuries ago. And, if one takes the statement of the great Russian critic as a standard for judging, this last quality is, perhaps, the most convincing proof of the greatness of the classic legend; for he maintains that only such art as is accessible and intelligible to both the educated and the uneducated, no matter what the nationality or religion or what the period of time, is truly great art.

2. The myth will act as a powerful stimulus in other lines of work, lending, as it does, so much poetry and beauty to the simple things and emotions of the child's everyday existence.

3. The interpretative nature of the myth makes the step into real science and history easy and natural.

4. The lofty feelings expressed within the compass of mythology offer a reasonable way for the teaching of ethics. Abundant expositions of such qualities of character as truth, honesty, chivalry, loyalty, contentment, filial affection, compassion, will be found in them.

5. To the mature student a knowledge of mythology is necessary in order that he may understand much of our best literature and art. Both modern and classical literature are full of mythological and legendary allusions, a perfect understanding of which is needful to the interpretation of the thought. Likewise the great mass of pictorial and sculptured art loses much of its significance unless viewed in the light of its classical inspiration.

THE TEACHING OF THE CLASSICS.

USE AND MISUSE OF "UNSEENS."

A PAPER on the right and the wrong use of "unseens" in classical teaching and examinations, by Prof. G. G. Ramsay, LL.D., of Glasgow, was read before the spring meeting of the Classical Association of Scotland, held at Aberdeen. Prof. Ramsay said the importance attached in Scotland to examinations in unseen work as contrasted with prepared books was quite recent. What had been the effects upon classical teaching of this new kind of examination? They had been palpable and admirable; a high standard for admission to the universities had been set up, and, in consequence, the standard of examination for the degree had been raised in all the old subjects of a course. But what had been the effect upon the classical education of the country, and upon the teaching given in the schools, of making the entrance to the university, so far as languages went, depend entirely upon grammar, unseen translations, and composition, to the exclusion of prepared books and of any questions to test a knowledge, however elementary and general, of the history, the life, the literature of ancient Greece and Rome? While highly satisfied by the results of the grammar and composition parts of the Preliminary Examination, Prof. Ramsay felt doubts as to the wisdom of confining the translation part of the examination entirely to unseen books.

THE TEACHING OF THE CLASSICS.

Now (continued Prof. Ramsay), if there is one thing more than another that has been brought out in recent discussions on classical education, it is that, if the classics are to keep their hold upon the nation as a main instrument of higher education, it must be by making the teaching of them more real, more living, and less technical, than it has tended recently to become. We do not want our boys to study Latin and Greek as linguistic puzzles; we wish them to be studied, no doubt, as an introduction to the principles of language in general, and as a potent help towards obtaining a mastery of their own tongue, or of any other they may have to learn, but also, and still more, as an introduction to the great central facts of human life and thought, of history and literature. These facts can be studied more fruitfully in connexion with ancient Greece and Rome, because they are there presented in simple fundamental forms, unencumbered by the mass of detail, untainted by the introduction of modern party questions, which make the study of modern life at once more difficult and less illuminating for the young mind. Therefore, both at school and at the university the great classical authors have to be studied as much for their matter as for their form. The real education to be gained from any great classical book is gained by mastering its contents, understanding its ideas and allusions, knowing what is to be known about the persons and places mentioned, comprehending the scope and the occasion of its being written, and thus learning to appreciate the beauty of the language and to feel what literature means. For the above purposes careful study of books as a whole is essential; and any examination which fails to bring out whether such a study has been given or not fails in its essential educational purpose.

"UNSEENS" IN THE HIGHER GRADES.

How far, then, does an examination consisting of unseen passages for translation provide such a test? My answer is that it depends largely upon the stage of proficiency reached by the pupil; more largely still upon the question whether such an examination has been made the be-all and the end-all of the teaching which it professes to test. When a really high standard of knowledge has been reached, "unseens" are admirable. No other test can be applied (alongside of composition) to discover whether or not a candidate possesses a finished knowledge of the niceties of a language; no other test throws the candidate so entirely upon his own resources. Hence it is used in all the highest university and Government examinations, whether in ancient or modern languages. But in examinations of this higher grade, an "unseen" does bring out and test knowledge which can only have been acquired by a previous thorough study of many books. No candidate can face an examination for an open university scholarship of the first grade without having read widely and read carefully. In such examinations the candidate must show in every piece that he translates that he understands the meaning and bearing of the piece, its allusions, its argument, its literary and historical setting. If he fails to do this, he will fail to give an excellent translation and to secure a high place. A good examiner has no difficulty in discovering whether a translation is composed of a series of happy or unhappy guesses, or is based upon a trained acquaintance with ancient life and literature.

"UNSEENS" IN THE LOWER GRADES.

But at an earlier stage of development the case is very different. It is of no use to set a boy down to a piece of "unseen" translation unless he has read enough in the same kind of style and in the same kind of subject to enable him more or less successfully to make his way through the whole. The teacher ought to make sure before setting an "unseen" that the pupil has material enough in his mind and training enough in the language to enable him to cope with it from his existing knowledge, and then the exercise is in the higher degree wholesome and stimulating. But it is a fatal mistake to put before a boy a mere puzzle which he has not the material in his brain to deal with; it is not fair to set him to a hopeless task, and it encourages that disastrous habit of making shots and random guesses which is destructive of sound and steady progress, and leads to forming habits of inaccuracy. I have had to look over "unseens" in which there was not one word of sense from beginning to end. The true method of teaching is to lead the pupil gradually on from step to step, explaining what is new, and encouraging him to make fresh steps for himself in a region where things have been already made plain to him. In the same way "unseens" should be introduced gradually in proportion to the amount of reading, and the kind of reading, which the pupil has gone through. His mind will be braced by feeling that he has a problem before him which is within his strength; whereas nothing is so discouraging for him as to feel conscious that he has not within him the means of answering the question asked.

PROPOSED CHANGE OF SYSTEM.

In the probable reform of university arrangements I should feel disposed to recommend a change which, without restoring the plan of setting definite portions of definite books to be prepared, might yet encourage scholars to read the best authors in the best way. It might be announced each year that the translations would be taken from certain considerable portions of certain authors. The portions named should be too large to admit of being crammed; and the definition of the subjects would secure that considerable portions of such authors were read, and read carefully. I would introduce also general questions in history, antiquities, and literature, quite of a general and easy kind—and with ample alternatives, so as to make sure that the authors read should be read not merely as exercises in language, but as an introduction to the real life of ancient Greece and Rome. The fact is that "unseen" translations are an excellent exercise for senior and honour students, and indispensable in honour examinations; but they should be used sparingly for pass men, and still more sparingly in the ordinary curriculum of schools. Just as it is premature to ask a boy to write an essay till he has got something in his head to say, so to put an "unseen" before him which goes beyond his reading is to ask him to make bricks without straw. I could give amusing, and even instructive, examples to show how often students who have passed even the Higher Preliminary have chaotic notions of the principal events, personages, and places ordinarily encountered in the classics. . . . And what I specially object to is that when a student finds a word printed with a capital letter he is apt to hold himself relieved from all further responsibility about it. Proper names are regarded as negligible quantities, and at every step the appreciation of an author is interfered with by ignorance of elementary facts of history, geography, mythology—all of which might easily be learned at school. Some instances of the difficulties caused by examinations of this kind to candidates who have not been well grounded in the language are quite pathetic and instructive also. . . .

CONCLUSION.

"Would you never, then, give "unseens" at school at all?" it may be asked. By no means; but I would remember that they are mainly for the best scholars in a school—the honour scholars, so to say—and that rather as a test of how far a scholar has got than as a means of instruction. I would never give to a pupil an "unseen" that was beyond his powers. I would not have him prepared specially for doing them. Like happiness itself, the power to do "unseens" comes most surely to those who have worked honestly, but without having that particular object in view.

THE COMMERCIAL VALUE OF A UNIVERSITY EDUCATION.

The conditions and circumstances both of commerce and of education are so infinitely various and different (writes Mr. J. Spencer Hill in the *Stratford-upon-Avon Herald*) that it is hardly possible to give an unqualified or general answer to the question, How far is a university education of value to a young man who is intended to make his living by commerce—that is to say, by buying and selling at an advantage to himself the various commodities which are demanded by the very complicated conditions of the society in which we all live to-day? There are also, of course, certain other callings which, though not purely commercial, are yet so closely connected with commercial life and commercial transactions that they can hardly be excluded in any survey of the question which aims at any completeness. To-day, however, the question is still further complicated by a certain uncertainty as to what the phrase "university education" really means. For the recent establishment and growth of the provincial university system in our great towns has at least started a system of higher education which in very many respects is essentially different from the recognized standards of education as hitherto understood at the old universities of Oxford and Cambridge. Between these varying differences both of essential and relative, it is nearly always quite impossible to draw any distinct line of demarcation, and all opinions on such subjects must necessarily be qualified according to particular cases and particular requirements.

The Business Man's Objections.

In the actual world of commerce itself the prevalent view is certainly, if not actually hostile, at least indifferent to university education as commonly understood. How far this is due to the fact that in many—perhaps in most—cases the present heads of our great business houses have never themselves known by actual experience exactly what a university education really means is uncertain. This hostility, however, is no doubt further strengthened by the obvious consideration that, from a superficial or outside view at any rate, there seem to be fundamental differences, if not actual antagonisms, between the methods of the office or counting house and those of the university lecture-room. The city man, for example, who works hard at his office from nine or ten in the morning till five or six in the evening, cannot be expected to approve the fashions of Oxford and Cambridge, which set apart the whole of the afternoon every day for pleasure and recreation. He is inclined to believe that a young man who has accustomed himself to so much undue relaxation will find an insuperable difficulty in accommodating himself to the sterner *régime* that is imposed upon those who hope to follow business successfully. Further, he is inclined to say that the knowledge of abstruse studies, such as the higher mathematics, or the Platonic theory of the Ideas, can have little or nothing to do with a close acquaintance with market prices, or the very necessary faculty of precasting a future rise or fall in the price of materials, or of coming out on top in a closely contested deal, or with that supreme quality in a successful man of business, the power of managing his employees. From such a point of view the conclusion may easily be drawn that three years spent in the practical training of business experience or in the acquisition of the necessary technical knowledge will produce much greater improvement in the purely commercial qualities of mind and brain, and stimulate the business aptitudes in a greater degree than three years' study of the higher branches of knowledge, whether in the sciences or in the humanities. Indeed, to those who take up the mere material point of view of pounds, shillings, and pence, of the American ideal of making one's pile as speedily as possible, the advocate of a university education has but little to reply. The hard facts of everyday life are, he must confess, too strong for him, and he can only cover his retreat by urging that, in spite of all these obvious drawbacks, the young university graduate, if he is a man of the right stuff, and if he really has the root of the matter in him—a qualification which, after all, is mainly inherent, and is very largely independent of external environment — will more quickly adapt himself to his new conditions, and will more rapidly acquire the new knowledge and new information he needs, than one who has lacked the mental training, the intellectual discipline, which is, after all, unless all educational theories are wholly mistaken, the supreme advantage of an extended training.

Long Views.

It is, indeed, a commonplace remark at nearly every prize distribution that those parents are the wisest who keep their boys and girls at school the longest. In the field of elementary education there are always those to be found who maintain that the children of the working classes are to-day being seriously over-educated, and that it would be better both for them and for those who pay for their education if their curricula were restricted to the modest dimensions which were thought sufficient twenty or thirty years ago. All the best available educational opinion, however, both here and in Germany, refuses to endorse these antiquated views, and this refusal, on principle at least, is equally hostile to the mere commercial view of education outlined above. And that it has at the bottom some sort of sound foundation is at least possible when we consider the two concrete examples of Scotland and Germany, two very different countries in which the highest educational ideals have been followed more fully than in most other nations. The broad commercial success of Scotsmen and Germans will hardly be denied even by the heads of our English commercial and business houses, and, if they were as ready to take the "long view" as distinguished from the "short view" in educational matters as they are in their commercial and speculative transactions, they would, we fancy, be more friendly to university education than some of them seem to be to-day. One piece of advice may, we think, be suggested. Except under very special circumstances it is probably unwise to send a boy who is intended for commercial life to the universities unless he is fitted by mental capacity and adequate school training to read for honours. If he lacks the necessary intellectual capacity to follow a university education in some of its higher developments, it is hardly likely that he will gain from his extended training the advantages which will alone compensate him for the time he spends upon them. Further, it is an obvious observation that at Oxford and Cambridge, at any rate, the larger majority of the passmen are from their social standing freed from the necessity of that hard and continuous application which is, of course, the first prerequisite of a successful business or commercial career. Unhampered and unrestricted by any serious necessity for serious study, they naturally enough spend the greater part of their time on pleasure and recreation, which, however enticing it may be to those who are fortunate (or rather unfortunate) enough to be able to afford it, is manifestly detrimental to the formation of those habits of order, regularity, and application which are, of course, indispensable to success in business, commerce, or anything else.

The Case for the University improving.

And now that the courses of instruction at the various universities are so steadily widening in accord with the widening tendencies of the times, the case for the advantage of a university education is distinctly stronger than it was in the last generation. The practical spirit of the age has proved too strong for the stolid conservatism of our most conservative institutions. Whether it is or is not for the best interests of education in the strictest sense of the term that Greek should be compulsorily required from all students of higher knowledge, it is at least certain that the proposed option in this fundamentally important matter—an option which is quite certain before very long to obtain university sanction—is the clearest evidence that those who guide the councils of the universities are at least quite awake to the tendency of public opinion. At the older universities we have already honours examinations in such distinctly utilitarian subjects as applied mechanics and modern languages, while the ever-widening subject of science, particularly in chemistry and physics, is careful to keep itself in touch with modern commercial necessities. In the younger provincial universities, which have from their birth been free from the antiquated traditions, as some may term them, of Oxford and Cambridge, the modern spirit finds still more interesting illustrations; so much so, that in the University of Birmingham —that Mecca of practical common-sense commercialism—a degree may be earned by the necessary proficiency in the very unacademic subject of brewing. How far this one instance foreshadows further development in the same direction is, perhaps, open to question; but that the older universities, no less than the younger, will be compelled to move more or less slowly and tentatively along the same path may be confidently anticipated.

REVIEWS.

The Thirty Years' War.

The Cambridge Modern History, Vol. IV.: The Thirty Years' War. (16s. net. Cambridge University Press.)

The fourth volume of the "Cambridge Modern History," if more compact and homogeneous than its predecessors, yet covers a very wide and most varied field, and the vicissitudes of the conflict "were so many and so tremendous as constantly to transform the designs of the belligerent Powers and often to modify materially the purposes of the personages most actively concerned in the course of affairs," while the effects of the struggle may be traced down to very recent times. Dr. A. W. Ward takes a large share in the narrative, dealing with the main course of the war throughout in a masterly manner: he describes the outbreak of the war (1620), tracing the converging causes during the preceding eight years; the Protestant collapse (1620–30) including the course of the Bohemian War, the Palatinate War, and the Lower Saxon and Danish War, down to the temporary dismissal of Wallenstein; "the great liberating expedition" of Gustavus Adolphus (1630–32); the later operations and death of Wallenstein (1632–34); the subsequent events down to the Peace of Prague (1634–35); and, finally, the Franco-Swedish stage (1635–48), the war "shifting to and from almost every part of Germany between the Alps and the Baltic, and everywhere leaving behind it desolation unutterable." A special chapter details the difficulties of reaching the settlement of the Peace of Westphalia, reviews the deplorable effects of the war, and concludes with the supplementary Peace of Oliva (1660). Dr. Ward's contribution forms the backbone of the book, and it will not disappoint the highest expectations that may have been based on his long and deep study of the period. Here is his estimate of Wallenstein:

> No personality occupies a place in the history of the Thirty Years' War at once so characteristic of that war and so unique in itself as that of Wallenstein. But his greatness—if such it was—lies not in his achievements either as a creator or as a leader of armies, though this "general without victories" both crushed Mansfeld and foiled Gustavus. Nor does it lie in his consummate insight and capacity as a politician who could use all circumstances and all conjunctures and would not permit himself to be used by any of his fellow-players in the game. It lies rather in the innermost purposes of his statesmanship, and, above all, in his supreme ambition to become the pacificator of the Empire, in the interests of that Empire as a whole, and to liberate it both from the encroachments of the foreigner and from the internal dominion of the Reaction. Herein he showed a far-sightedness due to the inspiration of a grand self-reliance rather than to communings with the stars. . . . The gain for religious freedom secured by the peace which ended the war could not have been achieved had Wallenstein's sword, when the issues of the conflict so largely depended upon it, been thrown into the scale of an uncompromising intolerance.

And here is his pronouncement on Gustavus:

> The full significance of the removal of such a personality from the very midst of the scene of military, as well as that of political, action it would be almost impossible to overestimate. He was great, not only because of what he achieved, but of what he set himself to accomplish. . . . As the simple triplet on the stone at Breitenfeld avers, he saved religious liberty for the world. He did so consciously, and not as a mere consequence of his political designs. To the fulfilment of his purpose he brought the gifts of a born ruler of men, as well as those of a great general and a great statesman. Cast in heroic mould, of commanding stature and fair-haired (*re d'oro*), he was a Swede every inch of him. Affable, free of speech, full of wrath if discipline were broken or disaster provoked, he was the comrade of his soldiers, by whose side he fought and prayed. He was at the same time a master of military detail; his reforms were grounded on experience and his tactics inspired by the prescience of victory. He had been carefully trained in the art of government, and, besides being able to speak eight languages and interested in letters and learning, was versed in the administrative business of his own country and capable of understanding the political systems of other lands. He was an adept in negotiation; he was proof against the diplomatic insinuations of Wallenstein, and met as an equal the statecraft of Richelieu. His occasional political miscalculations and his strategic mistakes—not always easily distinguishable from one another—were almost invariably redeemed by his courage and resource; but the foundation of his strength lay in his unfaltering conviction that his cause was that of his country and one of which God had charged him with the defence.

The war, once ablaze, gradually absorbed into itself all the local wars of Europe. "All the wars that are on foot in Europe," wrote Gustavus to Oxenstierna in 1628, "have been fused together, and have become a single war"—the quarrels of the Alpine leagues and those about the Mantuan succession, the rivalries of the Scandinavian north and of the Polish north-east, the struggle, only temporarily suspended, of the United Provinces against Spain, the perennial strife between Spain and France for predominance in Italy and elsewhere. These movements are all chronicled in due connexion with the main stream of events. Dr. H. F. Brown explains very clearly the events in the Valtelline (in the upper valley of the Adda) with the severe lessons of the Grisons (1603–39). Mr. Stanley Leathes treats admirably, in separate chapters, Richelieu and Mazarin. He gives the following points of comparison and contrast:—

> The personality of Mazarin fills his period no less than that of Richelieu the previous eighteen years. In both periods all serious public action in France was directed by or against the Chief Minister. But, whereas Richelieu gave a new form to the polity of France, the energies of Mazarin were devoted to working out in his own way the formulæ provided by his predecessor. In foreign policy he garnered where Richelieu had sown. At home he perpetuated Richelieu's errors and supplied none of his omissions. The second period seems to repeat the first; only the means of action are different. While Richelieu relied mainly on force for the accomplishment of his ends, Mazarin trusted to subtlety, adroitness, diplomacy, and tact. Forces which Richelieu would have crushed at the risk of perishing in the attempt Mazarin allowed to grow and work till they became dangerous; he then eluded, diverted, managed them, until their energy was exhausted. . . . By adopting in every crisis the less detrimental of alternatives presented, he secured in the end successes more complete and substantial than his predecessor; but he added no new idea to the repertory of statesmen; the ends which he reached had already been indicated before his coming; a consummate opportunist, he left no distinctive and individual mark on the State or policy of France.

Mr. W. F. Reddaway tells of the Vasa in Sweden and Poland (1560–1630), and again of the rivalry of the Danish and Swedish States (1559–1660). Dr. G. W. Prothero deals with the constitutional and civil struggles in England (1625–49), receiving vigorous reinforcement from Colonel E. M. Lloyd, R.E., in the treatment of military conditions and movements. Dr. W. A. Shaw carries on the story through the Commonwealth and the Protectorate (1649–59), and explains the work of the Westminster Assembly. Dr. J. R. Tanner describes the navy of the Commonwealth and narrates the First Dutch War; and the Rev. George Edmundson depicts the internal political, literary, and artistic achievements of the Dutch, and the foreign expansion of their dominion and commerce. Prof. Hume Brown sketches events in Scotland from the accession of Charles I. to the Restoration; Mr. R. Dunlop treats affairs in Ireland from the Plantation of Ulster to the Cromwellian Settlement; Prof. Firth briefly and ably describes the difficulties of the Long Parliament and the Army, and brings the narrative down to the Restoration; and Prof. Egerton recapitulates the transference of colonial power to the United Provinces and England. Spanish affairs are capably handled by Major Martin Hume, and Papal policy by Dr. Moritz Brosch. The final chapters are literary and philosophical summaries—"The Fantastic School of English Poetry," by Mr. A. Clutton-Brock, and "Descartes and Cartesianism," by Prof. Emile Boutroux.

The bibliographies occupy about 150 of the 1,000 pages of the volume. Fortunately, a very large and varied section of the enormous mass of literature on the period is contained in the Acton collection handed over by Mr. Morley to the Cambridge University Library, the whole of which "has been examined for the purposes of the present Bibliography." A pointed summary of the manuscript sources is also given. Appended is the usual serviceable chronological table; and the index, in double columns, exceeds forty pages. The whole volume forms a masterly compendium of the history of the period.

A Vindication of Darwinism.

Darwinism and the Problems of Life: a Study of Familiar Animal Life. By Conrad Guenther, Ph.D., Professor at the University, Freiburg in Baden. Translated from the Third Edition by Joseph McCabe. (12s. 6d. net. Owen.)

Prof. Guenther attributes the origin of the present work to "an attempt to appreciate the range, the foundation, and the

value of evolutionary theories," in the course of which he gathered a mass of information which he has sorted and systematized and worked in with the various theories. While his "chief aim has been to vindicate the value and importance of Darwinism," yet "every care has been taken to distinguish between facts and probabilities, and it has been clearly pointed out what general deductions may or may not be drawn from Darwinism." The work is expressly intended to appeal not merely to devoted students of science, but to all that take an interest in scientific questions, "to all educated people who would inform themselves as to the actual condition of theories of life." To this end the method of presentation has been adapted: after an introduction in which the author signalizes from observation of Nature the main processes for consideration and illustrates them, he surveys particularly in eight chapters the great classes of animal forms of life—Mammals, Birds, Reptiles, and so on, down to Protozoa. He takes his stand with "the average untrained observer," and supplies him in simple and lucid fashion with the necessary information as the exposition proceeds. "Starting from familiar objects, the book leads the reader on, almost unconsciously, to problems of increasing difficulty, until he is at length in a position to form an opinion on even the most difficult." At the same time, the problems in question are of exceeding complexity and difficulty, and, while Prof. Guenther is very instructive and suggestive, it will be prudent for the beginner in these studies to hold his final judgment in suspense till he has acquired a really substantial knowledge of the pertinent materials. Of the three final chapters one is devoted to a refutation of certain prominent objections to the theory of natural selection; another eliminates from the theory of selection all teleological elements, and proceeds to inquire "if mechanism gives us a satisfactory explanation of the world, and how it does so," and within what limits; and the last chapter is concerned with "Nature, History, and Ethics," distinguishing the scientific and the historical conception of the world, and marking the relation of both to ethics. Numerous footnotes, mainly of an historical character, will afford useful direction. The translation reads with the smoothness of original English, without the slightest suggestion of German idiom.

THE ENERGY OF RADIUM.

Radio-activity. By E. Rutherford, D.Sc., F.R.S., F.R.S.C., Director of the Physical Laboratories, Manchester University, formerly Macdonald Professor of Physics, McGill University, Montreal. Second Edition. (12s. 6d. net. Cambridge University Press.)

Prof. Rutherford is one of the most eminent of the creators of the new department of Physics with which the work deals, and he has the additional advantage of possessing the rare faculty of lucid exposition. The first edition of this work is well known as a standard treatise on the subject, but the advance of our knowledge of radio-activity within the last few years has been so rapid as to necessitate the addition of several chapters and the rewriting of a great part of the work. The first crude idea that we possessed in radium a substance whose atom disintegrated and threw off a fragment has been submitted to further research, in which the resources of the highest mathematical and experimental ingenuity have been utilized. As many as seven changes are now found to take place in the radium atom before the final product is reached. The other radio-active atoms have been found to undergo similar more or less complicated processes of disintegration. An account is given of Prof. J. J. Thomson's theory of the atom, which goes far to explain the rationale of the various processes that take place when an unstable atom breaks up.

The vast amount of internal energy in the atom may be realized from the estimate given that the radium emanation, in the course of its decay, produces three million times as much energy as is given out by the explosion of an equal volume of oxygen and hydrogen. It has not been found possible, as yet, to alter in any way the rate of emission of energy from the radio-active elements. If it should ever be found possible to control it, an enormous amount of energy could be obtained from a small quantity of matter. The effect of the occurrence of radium in the Sun and in the Earth on the rate of cooling of these bodies is discussed in detail. These calculations will have a far-reaching effect on our beliefs about the evolution of our planetary system, and about the extent of geological time.

The book is a complete and trustworthy exposition of radio-activity up to date, and is in every respect a production creditable to British science and to the Cambridge Physical Series.

GENERAL NOTICES.

Select Epigrams of Martial, Books VII.–XII. Edited, from the Text of Prof. Lindsay, by R. T. Bridge, M.A., and E. D. Lake, M.A., Assistant Masters at Charterhouse. (3s. 6d.; Introduction and Notes separately, 2s. 6d. Clarendon Press.)

These selections from the last six books of Martial are intended for the upper forms in schools. The assumption is that they will be read rapidly rather than minutely, and therefore the notes are mainly directed to making clear the thought and point of each epigram. Explanations of features of Roman life emerging in the text are given in a connected account set forth in the introduction. Besides a general index, there is a useful index of proper names, briefly telling all that is necessary about personages mentioned in the epigrams. An able, attractive, and serviceable edition.

Westminster Versions: Renderings into Greek and Latin Verse, reprinted from the "*Westminster Gazette.*" Edited by Herbert F. Fox, M.A., Fellow and Tutor of Brasenose College, Oxford. (3s. 6d. Oxford: Blackwell. London: Simpkin, Marshall.)

The series from which these prize copies of verses are culled proved a widely interesting feature of the Saturday *Westminster Gazette*, and many classical scholars will welcome the examples now gathered into a modest and agreeable volume of over a hundred pages. The space is about equally divided between Latin elegiacs, Greek iambics, and Latin hexameters. The workmanship generally is of a very high order, with rare flaws, though not without inequalities. Some of the *proxime accessits* might have been given. The volume will be very useful in the schools, as well as interesting to those that have long passed their portals.

ENGLISH LITERATURE.

Cambridge English Classics.—(1) *Essays, Plays, and Sundry Verses.* By Abraham Cowley. The Text edited by A. R. Waller, M.A. (4s. 6d. net.) (2) *Poems by George Crabbe, Vol. III.* Edited by Adolphus William Ward, Litt.D., Hon. LL.D., F.B.A., Master of Peterhouse. (4s. 6d. net.) (Cambridge University Press.)

(1) The first volume contained such of Cowley's poems as were collected in the folio published the year after his death. The present volume contains the poems not included in the folio, the prose writings collected in the folio, and the English plays. Mr. Waller has devoted great labour to the production of the best attainable text. The Latin poems will not be given in the present edition; but a Supplement of Notes, biographical and critical, is in preparation. This edition will long hold the field. (2) With this volume Dr. Ward also completes the standard edition of Crabbe. "The Tales of the Hall" are concluded (12 to 22); next come "Posthumous Tales" (22), and miscellaneous verses previously printed; and then more than eighty pages of fragments of tales and miscellaneous verses not previously printed. The preface gives an account of the Crabbe MSS. now in possession of the Cambridge University Press, and of certain other collections that Dr. Ward has been able to use. The variants are of considerable literary interest. An extensive bibliography, by Mr. A. T. Bartholomew, of Peterhouse, and of the University Library, is usefully appended.

Murray's English Literature Series.—(1) *The Story of English Literature: Vol. I.: The Elizabethan Period*, 1558–1625. By E. W. Edmunds, M.A., B.Sc. (3s. 6d.) (2) *Readings in English Literature:* (*a*) Senior Course, Vol. I.; (*b*) Intermediate Course, Vol. I.; (*c*) Junior Course, Vol. I.—each representing the Elizabethan Period. By E. W. Edmunds, M.A., B.Sc., and Frank Spooner, B.A. (3s. 6d., 2s. 6d., 2s. 6d.)

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SHAKESPEARE FOR SCHOOLS.

Twelfth Night; or, What you Will. Edited by John H. Brittain, B.A., Principal of the Rochdale Pupil-Teachers' Centre and Preparatory Classes. (2s. Ralph, Holland, & Co.)

The introduction explains systematically and simply all that the pupil need be told about the author, the production of the play, and the peculiarities of the language. The notes, which run along the foot of the page, are sensibly confined to explanations that are likely to be really helpful. An appendix gives a list of books of reference, a time analysis of the play, and a series of testing questions. The text is interleaved. Pupils that go through the play under Mr. Brittain's guidance will understand it adequately, and will want to go on to another with him. A judicious and attractive edition.

King Richard the Second. Edited by A. F. Watt, M.A. Oxon., B.A. Lond. (2s. Clive, Univ. Tutorial Series.)

The introduction gives a concise account of the poet's life and works, and deals sufficiently with the play itself—its story and characters, its sources and date, its style and metre, and its deviations from history. The notes are judicious and ample, the acts and scenes being explained in preliminary paragraphs, and Holinshed's story being cited in comparison. An index of proper names affords brief and adequate information about persons and places mentioned in the play. The type is good, and the binding substantial. A very good and useful edition.

The New Hudson Shakespeare.—(1) *The Merchant of Venice.* (2) *As You Like It.* Introduction and Notes by Henry Norman Hudson, LL.D. Edited and Revised by Ebenezer Charlton Black, LL.D. Glas., with the co-operation of Andrew Jackson George, Litt.D. Amherst. (2s. each. Ginn.)

These are specimens of a school edition of Dr. Hudson's well known Shakespeare. The introductions deal pretty fully and interestingly with the sources, date, editions, dramatic structure, diction and versification, characters, and general characteristics. The notes are placed at the foot of the page: they are partly textual, but chiefly explanatory and illustrative, and they are by no means overdone. The edition is a very serviceable one, and it is nicely printed and got up.

POETRY FOR SCHOOL AND HOME.

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This new series will help to popularize the work of the various writers. The form is attractive, and, though some may demur to selections, yet selections are better than nothing, and few poets can hope to be read in the entirety of their productions. Both the present volumes will be welcome by way of introduction to the best work of Spenser and Whittier. Excellent introductions are supplied by the editors, and the notes are few and select. The binding is designed by Paul Woodroffe; a portrait frontispiece and a vignette title are furnished to each volume by A. S. Hartrick; and 8 coloured illustrations are supplied to the "Spenser" by Jessie B. King, and to the "Whittier" by Charles Pears. We like this series well, and have no doubt that it will be very popular.

Scenes from Old Play-books. Arranged as an introduction to Shakespeare. By Percy Simpson, M.A., Assistant Master at St. Olave's Grammar School, and formerly Scholar of Selwyn College, Cambridge. (3s. 6d. Clarendon Press.)

"The book is a very interesting and laudable attempt to solve in a practical form some of the difficulties involved in a first reading of Shakespeare," and it "has been edited solely with an eye to young readers." Scenes from Shakespeare are reinforced with scenes from Fletcher, Heywood, Ford, Massinger, and Marston; and, "to lighten the difficulty presented by the language, phrases, lines, and sentences have been lopped freely whenever this could be done without positive ruin to the context, and occasionally the easier of two readings has been deliberately adopted." If the procedure may, for the specific purpose, be admitted as legitimate, it has been carried out with discretion. "The only notes are stage notes, and these have been lavishly supplied." The introduction explains a play and a Shakespearian play, and describes the theatre of Shakespeare's time, all very simply, lucidly, and agreeably. The last passage—from Marston—gives a very amusing and vivid picture of an English school-room in Shakespeare's time. A sufficient glossary is appended. The work is admirably done, and the volume should be very popular both in schools and for private reading.

Messrs. Macmillan publish a neat and agreeable edition of Tennyson's *In Memoriam*, with the author's notes edited by the present Lord Tennyson. The interest and importance of these notes are obvious, and the additional explanations and illustrations supplied by the editor are judicious and serviceable.

No. 2 of "The Museum of Dramatists" contains (1) *The Pardoner and the Friar* ("a merry play between the Pardoner and the Friar, the Curate and Neighbour Pratt") and (2) *The Four P.P.* ("a very merry interlude of a Palmer, a Pardoner, a Potycary, a Pedler," by John Heywood), edited, with useful introduction and note-book and word-list, by John S. Farmer (1s. 6d. net. Gibbings; for the Early English Drama Society). The volume is very carefully edited, and the portrait and facsimile of the handwriting of Heywood, as well as facsimiles of two title-pages, are very interesting.

HISTORY.

Modern Spain. 1815–1898. By H. Butler Clarke, M.A., late Fereday Fellow of St. John's College and sometime Taylorian Teacher of Spanish in the University of Oxford. With a Memoir by the Rev. W. H. Hutton, B.D., Fellow and Tutor of St. John's College, Oxford, and Examining Chaplain to the Bishop of Rochester. (7s. 6d. Cambridge University Press.)

Mr. Hutton's memoir furnishes a brief and sympathetic sketch of the life of the author and of the physical sufferings that brought it to a premature end. The book itself is one of the very best of the "Cambridge Historical Series." The writer was familiar with the country and with its history, and his heart was thoroughly in his work. He had taken the fullest precautions to master the facts, and his disposition and statement of them are alike lucid and effective, while his judgment is cool and impartial. "Spain's hope of peace and prosperity," he concludes, "depends on the purification of her administration, on the limitation of the activities of the Church to their proper sphere, on the creation of a feeling of confidence which shall allow better terms to be made with the national creditors, and shall set free for agricultural, industrial, and commercial enterprise the huge capital now absorbed by State loans." The hope must, we fear, be considerably deferred. Appended is a helpful bibliography, a full index, and an excellent map of Spain and Portugal.

Villani's Chronicle: being Selections from the first nine books of the "Croniche Fiorentine" of Giovanni Villani. Translated by Rose E. Selfe and Edited by Philip H. Wicksteed, M.A. Second Edition, carefully Revised. (5s. net. Constable.)

The selections are intended not as a contribution to the study of Villani, but as an aid to the study of Dante. Accordingly, references to Dante's works are placed on the margin throughout. Still the headings of the untranslated chapters are given, so that the reader may have the continuous thread of Villani's narrative in a general way. The introduction estimates the historical value of Villani's "Chronicle," sketches at some length (after Villari) the rationale of the revolutions of Florence, and remarks on the politics of Dante. While valuable to students of Dante, the book will be very interesting to a much wider circle.

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(*Continued on page* 184.)

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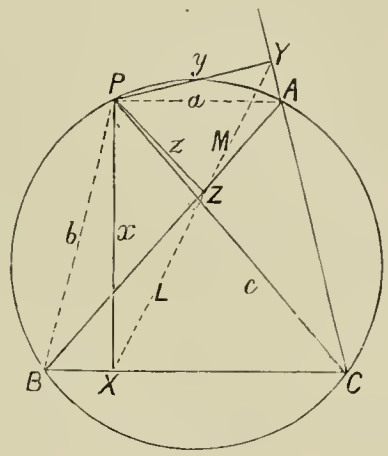
Stock Exchange, The History, Law, and Practice of the. By A. P. Poley, B.A. Oxon., Barrister-at-Law, assisted by F. H. Carruthers Gould, of the London Stock Exchange. Part I. 2d. Pitman.

[To be completed in 22 weekly Parts.]

MATHEMATICS.

10550. (E. M. LANGLEY, M.A.)—Deduce from Ptolemy's theorem the existence of Simson's line.

Solution by Rev. C. O'CONNELL.



$$Lb = x\,BZ - zBX \text{ (Ptol. th.)};$$

therefore $L = \dfrac{x\,BZ}{b} - \dfrac{z\,BX}{b}$.

So $M = \dfrac{y\,AZ}{a} + \dfrac{z\,AY}{a}$.

From similar triangles

$$\frac{BX}{b} = \frac{AY}{a};$$

therefore

$$L + M = \frac{x\,BZ}{b} + \frac{y\,AZ}{a} = \frac{x\,CY}{c} + \frac{y\,CX}{c}.$$

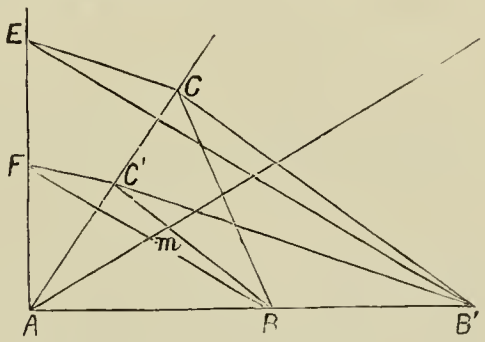
But $x\,CY + y\,CX = XY\,e$ (Ptol. th.);

therefore $L + M = \dfrac{XY\,c}{c} = XY$;

therefore X, Y, Z are collinear.

New Proofs of some of Euclid's Theorems.

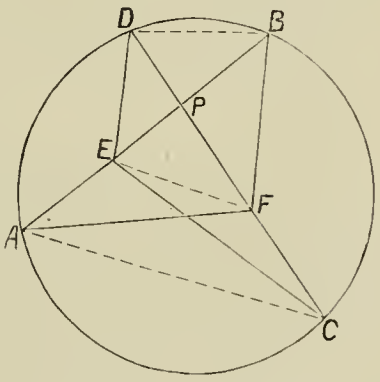
By GEORGE SCOTT, M.A.



In triangles equal in area and having an angle in common the rectangles contained by the sides about that angle are equal.—Let ACB and AC'B' be the two triangles. Since they are equal in area, BC' is parallel to B'C. On a perpendicular to AB erected at A lay off

$$AE = AC \quad \text{and} \quad AF = AC'.$$

C'F will plainly be parallel to CE, and the triangles BC'F and B'CE will be equiangular; therefore FB is parallel to EB', and A*m*, which bisects BF, will also bisect B'E; in other words, the rectangles AB . AF and AB' . AE are about the same diagonal; therefore the rectangles AB' . AF and AB . AE are equal; therefore AB' . AC' = AB . AC.



Two chords intersecting at P make

$$AP \,.\, PB = CP \,.\, PD.$$

[Proof by triangular areas.]—Make

$$PE = PD \quad \text{and} \quad PF = PB.$$

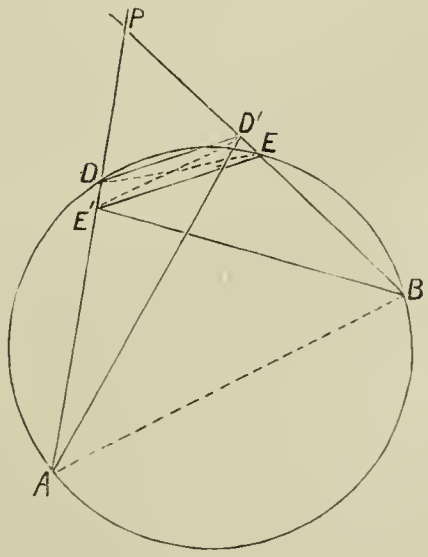
DE and BF will be parallel. Again,

$$\angle BDP = \angle PEF.$$

But BDP or BDC is equal to BAC, being in the same segment with it. Therefore EF is parallel to AC. Consequently the triangles APF and CPE are equal in area, while they have an angle in common; therefore

$$AP \,.\, PF = AP \,.\, PB = CP \,.\, PE;$$

and therefore $AP \,.\, PB = CP \,.\, PD$.



A new proof that the rectangles contained by the segments of secants drawn from a point to a circle are equal.—Let PA and PB be the two secants. Lay off

$$PD' \text{ (on PB)} = PD.$$

Make PE' = PE. The lines DD' and EE' are evidently parallel, and the angles DE'D' and DED' are equal. But the angle DED' is equal to the internal and opposite angle BAD of the quadrilateral ABED; therefore

$$\angle DE'D' = \angle BAD.$$

Therefore AB is parallel to E'D'. Hence the triangles APD' and BPE' are equal in area; but they have the angle APB common; therefore the rectangle

$$AP \,.\, D'P = PB \,.\, PE' \quad \text{or} \quad AP \,.\, PD = PB \,.\, PE.$$

Geometrical Note.

By H. L. TRACHTENBERG, B.A.

In the February number of *The Educational Times* the following problem of mine was solved :—"If the common points of two conics lie on a circle, the circle on the line joining the points of contact of a common tangent as diameter cuts this circle orthogonally." The following is a corresponding theorem in three dimensions :—

If the common curve of two conicoids lies on a sphere, the sphere on the line joining the points of contact of a common tangent line of the two conicoids as diameter cuts this sphere orthogonally.—This theorem can be proved independently, or it can be deduced from the first theorem as follows. Let the common tangent line touch the conicoids S_1, S_2 in T_1, T_2. Let the plane through T_1, T_2 and the centre of the sphere S_0 on which lies the common curve of S_1, S_2 cut S_1, S_2 in the conics S'_1, S'_2, the sphere S_0 in the circle S'_0, and the sphere S_3 on T_1T_2 as diameter in the circle S'_3. Then, since the common points of S_1S_2 lie on the sphere S_0, the common points of $S'_1S'_2$ lie on the circle S'_0. Again, T_1T_2 is a common tangent to the conics S'_1, S'_2, T_1, T_2 being the points of contact; and S'_3 is the circle on T_1T_2 as diameter. Therefore, by the first theorem, S'_0, S'_3 cut one another orthogonally. But S'_0, S'_3 are sections of the spheres S_0, S_3 by a plane through their centres. Therefore the spheres S_0, S_3 cut one another orthogonally.

16138. (*Communicated by* A. THOMSON.)—If $x_1, x_2, x_3, y_1, y_2, y_3$ be the roots of the cubics in x, y obtained by eliminating y, x respectively between the equations

$$(ax+hy+g)/x = (hx+by+f)/y = gx+fy+c,$$

show that $$x_2x_3+y_2y_3 = x_3x_1+y_3y_1 = x_1x_2+y_1y_2 = -1.$$

Solution by Professor NARANIENGAR, M.A.

Let $(ax+hy+g)/x = (hx+by+f)\,y = gx+fy+c$, each $=\lambda$, say; then

$$(a-\lambda)\,x+hy+g = 0,\quad hx+(b-\lambda)\,y+f = 0,\quad gx+fy+(c-\lambda) = 0.$$

Now, these are the equations simultaneously satisfied in order that

$$f(xy)-\lambda(x^2+y^2+1) = 0$$

may represent two straight lines. Hence the co-ordinates of the points of intersection of the pairs of straight lines formed by joining the four common points of $f(xy) = 0$ and $x^2+y^2+1 = 0$ satisfy the proposed equations. By a well known theorem, therefore, the three points of intersection are the vertices of a self-conjugate triangle. Hence, if (x_1y_1), (x_2y_2), (x_3y_3) be the roots of the cubics, it follows that

$$x_1x_2+y_1y_2+1 = 0,\ \ldots.$$

An Empirical Rule for the rough calculation of the time in which a certain sum trebles itself at a given rate per cent. (compound interest), or of the rate per cent. (compound interest) at which a certain sum trebles itself in a given time.

By SARADAKANTA GANGULI, M.A.

The following rule is found by observation :—

To find the number of periods divide $111\frac{1}{2}$ by the rate per cent. per period; and to find the rate per cent. per period divide $111\frac{1}{2}$ by the number of periods.

The number of periods in which a certain sum trebles itself

$$\text{at } 1\% = 110{\cdot}4 = \frac{110{\cdot}4}{1},\quad \text{at } 2\% = 55{\cdot}47 = \frac{110{\cdot}94}{2},$$

$$\text{at } 3\% = 37{\cdot}17 = \frac{111{\cdot}51}{3},\quad \text{at } 4\% = 28 = \frac{112}{4},$$

$$\text{at } 5\% = 22{\cdot}51 = \frac{112{\cdot}55}{5}.$$

The mean of the numbers which, divided by the rates, give the corresponding periods

$$= \frac{110{\cdot}4+110{\cdot}94+111{\cdot}51+112+112{\cdot}55}{5} = \frac{557{\cdot}4}{5} = 111{\cdot}5 \text{ nearly} = 111\tfrac{1}{4}.$$

16101. (Professor NEUBERG.)—Soient A′, B′, C′, D′ les projections des sommets A, B, C, D d'un tétraèdre sur un plan quelconque. Démontrer que les perpendiculaires abaissées des points A′, B′, C′, D′ respectivement sur les faces BCD, CDA, DAB, ABC du tétraèdre sont quatre génératrices d'un même hyperboloïde.

Solution by A. M. NESBITT, M.A.

If the four vertices have for co-ordinates

$$(l_1, l_2, l_3),\quad (m_1, m_2, m_3),\quad (n_1, n_2, n_3),\quad (r_1, r_2, r_3),$$

the four faces have for equation

$$xL_1+yL_2+zL_3+L = 0,\quad xM_1+yM_2+zM_3+M = 0 \ldots\ldots (l, m),$$
$$xN_1+yN_2+zN_3+N = 0,\quad xR_1+yR_2+zR_3+R = 0 \ldots\ldots (n, r)$$

where L_1, L_2, L_3, L, ... are the co-factors of l_1, l_2, l_3, l, ... in the determinant $\begin{vmatrix} l_1, & l_2, & l_3, & l \\ m_1, & m_2, & m_3, & m \\ n_1, & n_2, & n_3, & n \\ r_1, & r_2, & r_3, & r \end{vmatrix}$ wherein $l = m = n = r = 1$. The projections of the four points on the plane of xy are $(l_1, l_2, 0)$, ...; so that the four perpendiculars are given by $(x-l_1)/L_1 = (y-l_2)/L_2 = z/L_3$, with similar ones in m, n, and r. Now the six co-ordinates of this line are readily found to be proportional to $-L_3l_2$, L_3l_1, $L_1l_2-L_2l_1$, L_1, L_2, L_3, and, since $L_3l_2+\ldots+R_3r_2$ is identically zero, while

$$L_1+\ldots+R_1 = L_1l+\ldots+R_1r,$$

and is therefore also zero, it follows that the sum of corresponding co-ordinates from the four lines vanishes. Now, if we denote the six co-ordinates by a, b, c, f, g, h with suffixes 1, 2, 3, 4 and form the equation to the hyperboloid passing through the first three of them, its coefficients (see Salmon, Art. 114) consist of a number of determinants such as $\begin{vmatrix} a_1, & b_1, & g_1 \\ a_2, & b_2, & g_2 \\ a_3, & b_3, & g_3 \end{vmatrix}$, ... But, since $\Sigma a = 0$, ..., this is the equivalent of $-\begin{vmatrix} a_1, & b_1, & g_1 \\ a_2, & b_2, & g_2 \\ a_4, & b_4, & g_4 \end{vmatrix}$, and so with the others. Hence the hyperboloid passing through the lines (l, m, n) also passes through (r).

16149. (ROBT. W. D. CHRISTIE.)—When 12345679 is multiplied by 9 we get a succession of units. Explain the reason and give the general theorem. Put also in Hensel's notation, using prime 7.

Solution by Lt.-Col. CUNNINGHAM, R.E., *and* F. E. RELTON.

If r be the radix of the scale of notation, then the number N which consists of $(r-1)$ repeated units is, of course, divisible by $(r-1)$; and on division, it is found that

$$N/(r-1) = [1/(r-1)]\,[(r^{r-1}-1)/(r-1)] = (111\ldots1)/(r-1)$$
$$= r^{r-3}+2r^{r-4}+3r^{r-5}+\ldots+mr^3+nr^2+or+q$$

where $q = r-1$, $p = r-2$, $o = r-3$, $n = r-4$, $m = r-5$, ... are the successive digits preceding r in the scale of r; and it is seen that the digit $p = r-2$ is omitted in the quotient of $N/(r-1)$. This gives

$$\tfrac{1}{9}[(10^9-1)/(10-1)] = \tfrac{1}{9}(111111111) = 12345679$$

(omitting 8) in scale of 10; also

$$\tfrac{1}{6}[(7^6-1)/(7-1) = \tfrac{1}{6}(111111) = 12346$$

(omitting 5) in scale of 7.

The PROPOSER's Solution is as follows :—

We have in the concrete

$$\begin{aligned} 0.9 &\quad +1 = 1 \\ 1.9 &\quad +2 = 11 \\ 12.9 &\quad +3 = 111 \\ 123.9 &\quad +4 = 1111 \\ 12345678.9 &\quad +9 = \\ 12345679.9 &\quad +0 = 111111111, \end{aligned}$$

and in the abstract

$$\begin{aligned} & n.10^0+n-1.10^1+n-2.10^2+\ldots[n-(n-1)]\,10^{n-1}\,(10^1-1)+(n+1)\,10^0 \\ &= n.10^1+n-1.10^2+n-2.10^3+\ldots \qquad 1.10^n+(n+1)\,10^0 \\ &\quad -n-1.10^1-n-2.10^2-n-3.10^3-\ldots \qquad 0.10^n-n.10^0+n+1.10^0 \\ &= 1.10^0+1.10^1+1.10^2+1.10^3+\ldots \\ &= 111111111. \end{aligned}$$

In the scale of 7 we have

$$\begin{aligned} 0.6+1 &= 1 \\ 1.6+2 &= 11 \\ 12.6+6 &= 111 \\ 12345.6+6 & \\ = 12346.6+0 & \\ = 111111 \text{ in scale of } 7; & \end{aligned}$$

and, generally,

$$\begin{aligned} & 1.7^4+2.7^3+3.7^2+4.7^1+5\,(7-1)+7-1 \\ &= 1.7^5+2.7^4+3.7^3+4.7^2+5.7^1 \quad +7-1 \\ &\quad -1.7^4-2.7^3-3.7^2-4.7^1 \quad -5 \\ \hline & 1.7^5+1.7^4+1.7^3+1.7^2+1.7^1 \quad +1; \end{aligned}$$

and, universally,

$$r^{r-2}+r^{r-3}+r^{r-4}+\ldots+r^2+r^1+1 \text{ in scale of } r$$
$$= 111111\ldots \text{ to } (r-1) \text{ units in scale of } r.$$

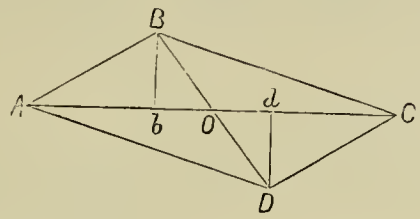
15349. (Professor SANJÁNA, M.A.)—The diagonals of a quadrilateral ABCD meet in O. If BO = OD, and AB + BC = AD + DC, prove that the quadrilateral is a parallelogram.

Solutions (I.) *by* J. H. Taylor, M.A., *and* W. E. Harrison; (II.) *by* C. E. Youngman, M.A.

(I.) B and D are points on an ellipse of which A and C are foci. BD is either at right angles to AC or it is not. In the first case

AB = AD and CB = CD,

and the figure is symmetrical about AC. In the second case D*d* and B*b*, drawn at right angles to AC, are equal, and therefore equidistant from the foci A and C respectively. Hence AB is parallel to CD and AD is parallel to CB.



(II.) Since BO = OD, the areas ABC, ADC are equal. Hence another enunciation suggests itself, namely: Two triangles which have equal areas, equal bases, and equal sums of the other two sides are equal in all respects. For then

$$a, \quad (b+c), \quad \text{and} \quad [(b+c)+a][(b+c)-a][a-(b-c)][a+(b-c)]$$

are the same in both triangles; therefore $(b-c)$ is the same, too, and consequently b and c. Therefore either AB = AD and BC = DC or else AB = DC and BC = AD. In the first case ABCD is symmetrical about AC; in the second it is a parallelogram. Probably the Question should have been printed AO = OC instead of BO = OD: it would then follow that AB + AD = BC + DC; so that AB = AD would be excluded, except when ABCD is a rhombus.

16122. (A. M. Nesbitt, M.A.)—The tangents to a hyperbola at P and Q meet an asymptote in X and Y. Prove that PQ bisects XY.

Solutions (I.) *by* Professor Nanson; (II.) *by* James Blaikie, M.A., *and* R. J. Whitaker; (III.) *by* Professor Sanjána, M.A.

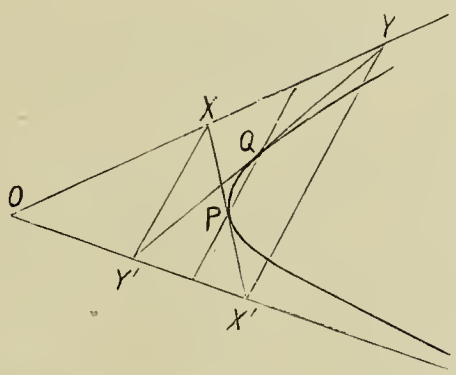
(I.) It is known that the lines joining a variable point R on a hyperbola to two fixed points P, Q on the hyperbola intercept a fixed length on either asymptote. Making the point R coincide with P, Q in turn, the result stated follows.

(II.) Let XX′, YY′ be the parts of the tangents cut off by the asymptotes OX, OX′. Then,

since $\Delta XOX' = \Delta YOY'$,

$\Delta XY'X' = \Delta YXY'$,

and XY′ is parallel to YX′. Therefore a straight line parallel to and equidistant from XY′ and YX′ will bisect XY, XX′, Y′Y, Y′X′. That is PQ passes through the mid-point of XY.



[Rest in *Reprint*.]

15754. (Professor Neuberg.)—Pour qu'une substitution

$$x = (\alpha z + \beta)/(\gamma z + \delta)$$

ramène l'équation

$$a_0x^n + \frac{n}{1}a_1x^{n-1} + \frac{n(n-1)}{1.2}a_2x^{n-2} + \ldots + a_n = 0$$

à la forme binôme $z^n - p = 0$, il faut et il suffit que les déterminants formés avec trois colonnes quelconques du tableau

$$\begin{matrix} a_0 & a_1 & a_2 & \ldots & a_{n-2} \\ a_1 & a_2 & a_3 & \ldots & a_{n-1} \\ a_2 & a_3 & a_4 & \ldots & a_n \end{matrix}$$

soient nuls.

Solution by C. M. Ross.

The given substitution may be written $z = (\delta x - \beta)/(\alpha - \gamma x)$. If the equation

$$a_0x^n + \frac{n}{1}a_1x^{n-1} + \frac{n(n-1)}{1.2}a_2x^{n-2} + \ldots + a_n = 0 \quad \ldots\ldots\ldots\ldots(1)$$

reduces to

$$z^n - p = 0 \quad \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots(2),$$

(1) must be equivalent to $(\delta x - \beta)^n - p(\alpha - \gamma x)^n = 0$. Therefore, equating coefficients,

$$a_0 = \delta^n - p\alpha^n, \quad a_1 = -(\delta^{n-1}\beta - p\alpha^{n-1}\gamma),$$
$$a_2 = \delta^{n-2}\beta^2 - p\alpha^{n-2}\gamma^2 \ldots a_n = -(\beta^n - p\gamma^n).$$

Now, if γ/α, β/δ are the roots of the equation

$$Ut^2 - Vt + W = 0 \quad \left(\begin{matrix} U\beta^2 - V\delta\beta + W\delta^2 = 0 \\ U\gamma^2 - V\gamma\alpha + W\alpha^2 = 0 \end{matrix}\right),$$

then

$$\begin{aligned} Ua_2 + Va_1 + Wa_0 &= U\delta^{n-2}\beta^2 - pU\alpha^{n-2}\gamma^2 - V\delta^{n-1}\beta + pV\alpha^{n-1}\gamma + W\delta^n - pW\alpha^n \\ &= \delta^{n-2}[U\beta^2 - V\beta\delta + W\delta^2] - p\alpha^{n-2}[U\gamma^2 - V\gamma\alpha + W\alpha^2] \\ &= 0 \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots(3). \end{aligned}$$

Similarly

$$Ua_3 + Va_2 + Wa_1 = 0 \quad \ldots\ldots\ldots\ldots\ldots\ldots(4),$$
$$Ua_4 + Va_3 + Wa_2 = 0 \quad \ldots\ldots\ldots\ldots\ldots\ldots(5),$$
$$\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots$$
$$Ua_n + Va_{n-1} + Wa_{n-2} = 0 \ldots\ldots\ldots\ldots\ldots\ldots(n+2).$$

Eliminating U, V, W from these equations,

$$\begin{vmatrix} a_2, & a_1, & a_0 \\ a_3, & a_2, & a_1 \\ a_4, & a_3, & a_2 \\ \ldots & \ldots & \ldots \\ a_n, & a_{n-1}, & a_{n-2} \end{vmatrix} = 0.$$

The matrix may be written

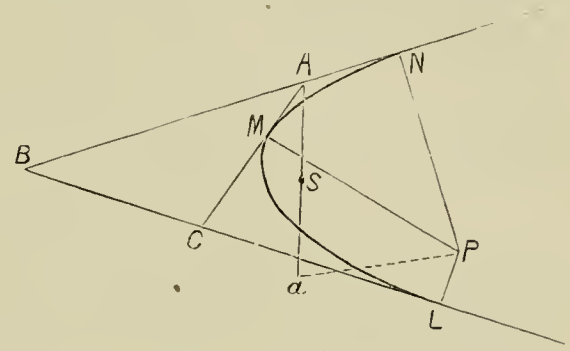
$$\begin{vmatrix} a_0, & a_1, & a_2, & \ldots, & a_{n-2} \\ a_1, & a_2, & a_3, & \ldots, & a_{n-1} \\ a_2, & a_3, & a_4, & \ldots, & a_{nn} \end{vmatrix} = 0.$$

16103. (R. F. Scott, M.A.)—Normals PL, PM, PN are drawn to a parabola, focus S. Prove that the diameter of the circle circumscribing the triangle formed by the tangents to the parabola at the points L, M, N is equal to SP.

Another Geometrical Solution of the Proposition by V. Ramaswami Aiyar, M.A.

Let ABC be the triangle formed by the tangents at L, M, N. Join AS, BS, CS, and produce them to a, b, c, making

AS = Sa, ...



Since the parabola touches AM, AN at M, N, the focus S is the middle point of the symmedian chord of the circum-circle of the triangle AMN drawn through A. That is, Aa is the symmedian chord in question. Also AP is the diameter of the circle. It follows that the angle PaS is right. Similarly the angles PbS and PcS are right angles. Hence SP is a diameter of the circum-circle of the triangle abc. But this triangle is equal in all respects to ABC. Hence, &c.

The above analysis gives the Solution of (and was obtained by the Solver in connexion with) a very interesting theorem of Prof. De Longchamps given in *The Educational Times* of October, 1891, which is:—Normals being drawn to a parabola from any point P, the circle circumscribing the triangle formed by the tangents at their feet subtends a fixed angle at P.

The Proposer solves the Question as follows:—

With Mr. Nesbitt's notation, if Δ be the area of the triangle ABC,

$$2\Delta = \begin{vmatrix} amn, & a(m+n), & 1 \\ anl, & a(n+l), & 1 \\ alm, & a(l+m), & 1 \end{vmatrix} = a^2(l-m)(m-n)(n-l).$$

If R be the radius of the circle in question,

$$4R \,.\, \Delta = BC \,.\, CA \,.\, AB \quad \text{or} \quad 2R = a\sqrt{[(1+l^2)(1+m^2)(1+n^2)]}.$$

The result follows as in Mr. Nesbitt's Solution.

QUESTIONS FOR SOLUTION.

16183. (Professor R. W. Genese, M.A.)—Inward forces act at the mid-points of the sides of any plane quadrilateral at right angles and proportional to the opposite sides. Prove (1) that they balance, (2) that the resultant of two opposite forces acts along the directrix of the parabola inscribed in the quadrilateral.

16184. (A. M. Nesbitt, M.A.) — $z + my = 0$ is a smooth inclined plane which exists only in the region for which x and z are positive and y negative. A particle is projected along this plane from the point A $(a, 0, 0)$ with velocity V towards the plane of yz and at an angle θ with AO, and after crossing the side of the inclined plane strikes the plane of xy in P. Find the locus of P (1) when m is fixed and θ varies, (2) when θ is fixed and m varies.

16185. (Professor Neuberg.)—Trouver

$$\int \frac{\sin 5x}{\sin 3x}\,dx, \quad \int \frac{\sin 3x}{\sin 5x}\,dx.$$

16186. (W. J. Greenstreet, M.A.)—

$$\Sigma \tan^{-1}\frac{3.2^n}{2^{2n+1}-1} = 1 - \frac{1}{3.7} + \frac{1}{5.31} - \frac{1}{7.127} + \ldots.$$

Discuss the convergency.

16187. (V. Ramaswami Aiyar, M.A.)—A. and B. play at a game, in which each game is won by A. or B. by an equal chance, for a fixed stake on each game. B. has enough money; while A., having none, poses as if he has enough, too. Show that the probability that A.

would be able to maintain his pretension for $(2n-1)$ games or $2n$ games is

$$\frac{1}{2}\cdot\frac{3}{4}\cdots\frac{(2n-1)}{2n}.$$

16188. (Lt.-Col. ALLAN CUNNINGHAM, R.E.)—Determine the sides of two right-angled triangles in integers so that the product of the hypothenuse and a side of one may be equal to the product of the hypothenuse and a side of the other.

16189. (T. STUART, M.A., D.Sc.)—Find a direct, non-tentative, and quick process for solving the equation $x^2 = a \pmod p$ where a is a quadratic residue of p and p is a large prime. Exhibit your method by solving the equations

$$(a)\ x^2 = -537 \pmod{6311},\quad (b)\ x^2 = 3582 \pmod{7177},$$
$$(c)\ x^2 = 3789 \pmod{8513}.$$

16190. (R. W. D. CHRISTIE.)—If N = AB, all integral, prove that the small factor $A = \{[4bN + (a-bc)^2]^{\frac{1}{2}} - a + bc\}/2b$ and the large factor $B = \frac{1}{2}\{[4bN + (a-bc)^2]^{\frac{1}{2}} + a - bc\}$. Also (2) $(a-bc)^2 = (B-bA)^2$, all the letters being integral: *e.g.*, N = 257821. Then one set of values (out of many) is $b = 2$, $c = 10$, $a = 69$; or, again, $b = 2$, $c = 8$, $a = 65$. It is required to find the small letters.

16191. (D. BIDDLE.)—When a number is known to be composite one of the simplest ways of factorizing it is to take

$$N = (x+y)(x+my) = x^2 + (m+1)\,xy + my^2,$$

since even where the factors are unchanged the values of m, x, y may be various. The equation yields

$$x = \tfrac{1}{2}\{[4N + (m-1)^2 y^2]^{\frac{1}{2}} - (m+1)\,y\} \quad\ldots\ldots(1)$$

or

$$y = \{[4mN + (m-1)^2 x^2]^{\frac{1}{2}} - (m+1)\,x\}/2m \quad\ldots\ldots(2).$$

Of these (1) answers best when the factors are nearly equal, and (2) when there is considerable disparity. Taking the ratio of the first to the second factor to lie between consecutive members of the following series $\frac{1}{10}, \frac{2}{10}, \frac{3}{10}, \ldots, \frac{10}{10}$, find for each position the maximum number of trials required to factorize N. A very few suffice in most cases.

16192. (G. BOOL, B.A.)—Find the solution of

$$a^2 - b^2 = b^2 - c^2 = 13.$$

16193 (Professor NANSON.)—It is known that any conic through four fixed points cuts a fixed line in points harmonically conjugate to two fixed points on the line. Show generally that any quadric of n dimensions through $n+2$ fixed points cuts a fixed plane in a quadric of $n-1$ dimensions harmonically circumscribed about a fixed quadric of $n-1$ dimensions in the fixed plane.

16194. (C. E. YOUNGMAN, M.A.)—If a circular cubic inverse to a conic goes through its own double focus, the conic must be a rectangular hyperbola; and, if A be the node of the cubic, B the double focus, and C the third point common to the curve and its asymptote, the cubic is in ABC the isogonal transformation of a circle about B.

16195. (Professor COCHEZ.)—Discuter le genre et la variété des courbes $x^2(2-h) - 2xy + y^2 - hx - 2y + 4 - h = 0$ pour toutes les valeurs réelles du paramètre h.

16196. (Hon. G. R. DICK, M.A. Suggested by Question 16014.)—A parabola circumscribes a given equilateral triangle. Show that its focus lies on the curve $64r^3 \cos 3\theta\,(r^2 + 2a^2) = 48ar^4 + 308a^3r^2 + 343a^5$, where a is $\frac{1}{4}$ of the radius of the circumscribing circle and its centre is the origin of co-ordinates, the line from the centre to an angular point being taken as prime radius.

16197. (L. ISSERLIS, B.A.)—A straight line moves so as to cut three fixed conics in six points forming an involution. Find the locus of the centre of the involution.

16198. (W. AUSTIN SLEIGH, B.A. Suggested by Question 15977.)—If the tangent at P meet the major and minor axes in T and t, prove that T is the radical centre of the circles GCg, GCt, SPS′.

16199. (W. F. BEARD, M.A.)—Find the envelope of a straight line on which two given circles intercept equal chords.

16200. (Professor SANJÁNA, M.A.)—The great circle bisecting perpendicularly the side BC of the spherical triangle ABC meets the great circles bisecting internally and externally the angle A in the points D, E. Prove that D and E lie on the small circle circumscribing ABC.

OLD QUESTIONS AS YET UNSOLVED (IN OUR COLUMNS).

8803. (H. L. ORCHARD, B.Sc., M.A.)—Two small spheres A, B, each of radius r and density ρ, are connected at the ends of a fixed semicircular tube, into which they just fit, by an inextensible string, as in the figure. The diameter AB is horizontal and at a height $\pi(R+r)$ from the ground, R being the internal radius of the ("perfectly smooth") tube. A vertical downward force, equal to $1/n$-th the weight of either sphere, is now applied to the sphere B. Find the time when, and the velocity with which, A will leave the tube.

9615. (Professor BORDAGE.)—Find (1) the most general functions f and ϕ such that for all values of x and y the expression

$$V = (x^2 - y^2)\,[f(x+y) + \phi(x-y)]$$

can be put under the form $V = F(x) - \Phi(y)$; and (2) the functions F and Φ.

9725. (A. E. THOMAS.)—Solve the equations

$$6(x^2+yz)^2 + 4x(y^3+z^3) = a^4 + 5x^4 \quad\ldots\ldots(1),$$
$$6(y^2+zx)^2 + 4y(z^3+x^3) = b^4 + 5y^4 \quad\ldots\ldots(2),$$
$$6(z^2+xy)^2 + 4z(x^3+y^3) = c^4 + 5z^4 \quad\ldots\ldots(3).$$

9803. (W. J. C. SHARP, M.A.)—Show that for any proper cubic the Cayleyan of the Hessian is the Hessian of the Cayleyan, and that the discriminant of the polar conic of any line vanishes doubly where the line touches the Cayleyan.

9992. (Professor EMMERICH, Ph.D.)—Construct a triangle, having given the vertices A_1, B_1, C_1 of its first Brocard triangle.

10213. (B. F. FINKEL, B.Sc.)—If three points are taken at random in a triangle, find the probability that the triangle formed by joining these three points contains the centre of gravity of the triangle.

NOTICE TO CORRESPONDENTS.

It is requested that all Mathematical communications should be sent to the Mathematical Editor,

Miss CONSTANCE I. MARKS, B.A., 10 Matheson Road, West Kensington, W.

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THE LONDON MATHEMATICAL SOCIETY.

Thursday, March 14th, 1907.—Sir W. D. Niven, Vice-President, in the chair.

Messrs. F. J. W. Whipple, A. Ackermann Teubner, M. T. N. Lyengar were elected members.

Mr. G. W. Evans-Cross exhibited his "Myriometer" Calculating Machine.

The following papers were communicated:—

"Reduction of the Factorisation of Binary Septans and Octans to the Solution of an Indeterminate Equation of the Second Degree," by Dr. T. Stuart.

"Invariants of the General Quadratic Form *modulo* 2," by Prof. L. E. Dickson.

"On Linear Partial Differential Equations of the First Order," by Mr. J. Brill.

Prof. A. E. H. Love made an informal communication "On the Representation of Functions by means of Series of certain Special Forms."

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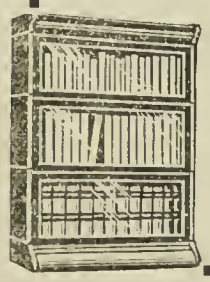

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The Educational Times.

The Wider Needs.

In another column we reproduce main points, especially touching secondary education, from the comprehensive and strenuous address delivered from the chair at the recent Conference of the National Union of Teachers at Oxford. The occasion certainly justified the President in taking a wide view. As an elementary teacher he naturally looked to the possibilities of an educational future for the children of the masses of the people; and, speaking in the halls of an ancient University, he could not but regard the means, or lack of means, of bridging the gulf beyond the primary stage. There is no need to be scared because Mr. Pickles foresees the approach of "a great wave of democratic education." The concrete meaning is sufficiently simple, and aspirations towards the end are perfectly reasonable, and, in fact, inevitable. The demand is simply the familiar claim that every child should have access to the means of education to the full measure of his intellectual ability. In Scotland, in Germany, in the United States, the path lies open without impediment; in England, in recent years, much has been done by way of the ladder of scholarships. But in England much remains to be done. For one reason and another, too, not a little is done in wrong ways. We do not intervene in the particular questions raised by Mr. Pickles in exposition of his general charge "that the administration of the secondary branch of the Board of Education is thwarting and hindering the higher educational interests of the children of the working classes." Clearly, Mr. Pickles, as a teacher, is in a position to form an opinion that is entitled to a calm hearing; as President of the Union he was justified in delivering it—nay, bound to deliver it; and the occasion lent special force to it. Beyond doubt, the Board of Education have something to say for themselves; and it is not necessary at the moment to attempt to strike a balance between the conflicting forces. It may be taken as certain that open, honourable, and reasoned criticism is good for the Board, as for all public boards, and will not be lost upon them. The mere fact that it is passed "in the interests of the children of the working classes" should give it special weight in view of the experience already gained from the opening up of chances to elementary-school children. "If any Government," said Huxley, "could find a Watt, a Davy, or a Faraday in the market, the bargain would be dirt cheap at £100,000."

The charge now brought against the official administrators of our education is, indeed, only a particular group of examples from the broader charge launched at the Government year after year by some of our foremost educationists. Last autumn, for example, Sir Norman Lockyer's striking volume on "Education and National Progress" brought together a series of papers extending over a generation, in which the distinguished author urged and illustrated the vital national importance of a right "education of everybody, from prince to peasant"; and, while recognizing what had been done during the preceding ten years, he affirmed that "instead of a relative advance, there is still a relative decline, in relation to other countries." "The United States and Germany now have greater populations than ourselves, and at the same time the best and most complete education: science and research are there fully fostered, while they are practically left uncared for by the British Government." Why, "at present [1903] there are almost as many *professors and instructors* in the universities and colleges of the United States as there are *day students* in the Universities and colleges of the United Kingdom"; and it is only by increased brain-power that smallness of numbers can be counterbalanced. Hence the urgent necessity not only of enlarged means of producing the required results, but also of greater care in applying the means, and also in widening as far as possible the area of the supply of ability. The latest Report issued from the United States Bureau of Education at Washington—for the year ending June 30, 1904—again drives home the lesson read by Sir Norman Lockyer. "It is a well known fact," writes the Commissioner, "that the income derived from fees received from students forms only about one-third of the total income, the remainder necessary to meet the expenses of the institutions being derived from endowment funds, State aid, and miscellaneous resources. While in England the State reluctantly departs from its traditional penuriousness, and private munificence is but fitful and scanty, the State and municipal aid to higher education was more than double in 1903–4 what it was five or six years before, and private liberality has also in a few years been doubled. A well known English man of science, summarizing the information of this Report upon higher education in a recent number of *Nature*, wrote:

All the statistics here brought together tell the same story; alike as regards number of students, number of university teachers, total value of university property, and total annual income from whatever point of view looked at, there is evidence of a strong and healthy growth in the system of higher education in the United States; and, though it can by no means be suggested that similar work in this country has remained stagnant, the most optimistic student of British affairs will hardly maintain that our universities and colleges can show progress and development at all commensurate with that the report of the Commissioner of Education reveals as true of the United States. It is clear that patriotic men of science among us cannot afford to relax their efforts to increase the efficiency of our universities and colleges, and to supplement their number. Students of science do not need to be reminded of the intimate connexion between cause and effect, but it behoves them to take every opportunity to convince statesmen and the public that industrial supremacy is, in the long run, one of the effects of an adequately equipped and generously endowed system of higher education.

The argument is not new, but unhappily it needs to be constantly repeated and insisted on. If Mr. Pickles has stirred up the administrators of secondary education, Sir Norman Lockyer has been no less hard upon "our political leaders, the permanent chiefs of the various public Departments," who "have not the slightest idea what all this fuss is about."

But remonstrance and objurgation require to be accompanied by constructive proposals. Mr. Pickles revives and recommends the suggestion that a Council of Education should be constituted on the lines laid down by the Royal Commission a dozen years back. This Council would take the place of the Consultative Committee, which Mr. Pickles treats with scant ceremony. It should consist of "a responsible Minister, some chosen members of Parliament, a secretary, the higher departmental officials, and representatives of the universities, of Local Education Authorities, and of the labour element, with an adequate number of experts accredited by the various educational bodies." Evidently such a Council would require to be thoroughly representative, and probably it would be no light task to constitute it so as "to command the full and complete confidence of the whole profession." But that is no argument against making a serious effort. What is required is a larger outlook, a more vivid realization of the importance of the work of education, a better co-ordination of educational forces upon their objects, and a harmonization of popular and official ideals.

NOTES.

"Greek once more a literature and Latin once more a living language—such, in brief, was the proposal for reform," writes "A Public School Master"—an Assistant—summarizing in the *Morning Post* the resolutions on the teaching of classics adopted at "the great educational conferences of the annual season of debate, 1906 to 1907." How, then, is the reform being carried out? "The polyphony of the Latin exhibits as many varieties as ever; the Greek still plods the same weary and ineffectual way as before": the Head Masters "begin with one consent to make excuse." And meanwhile?—

Meanwhile, Greek, as an instrument of education, is losing ground at a rate which no examination statutes and no head masters can delay, except by the sovran remedy of teaching it rationally. Every term the modern side is encroaching upon the classical. The requirement of compulsory Greek at the Universities does little to stem the tide, for parents are finding it not only possible but also expedient to send their sons to the modern side and trust to their cramming up the necessary Greek in the last year or so, should they decide on a University career. That the modern side should grow and flourish is all to the good; but it is far more important that the methods of the classical side should be modernized.

It is really very difficult to understand why "the sovran remedy" is not promptly applied. The reformed pronunciation is a perfectly simple thing, and reformed methods of classical teaching are more fruitful—once prejudice is peremptorily set aside; and it is rather expensive to cherish prejudices in practical affairs. Our Assistant concludes:

To make the teaching of the classics a living reality and to develop it side by side with a thorough training in the national literature and language—these are the reforms that alone can save the classical sides from the steady encroachment of commercial demands and utilitarian methods. The school authorities are willing—only too willing—to yield; but there are two methods of concession, and the Head Masters seem to be adopting the wrong one. They are giving up the kernel and clinging to the husk.

"Yet," he says very justly, "if they are only as good as their word, they may yet save the whole nut—for the nourishment of young minds." And surely, after all, they will be as good as their word.

The Report on the Annual Parliamentary Grant to Universities and University Colleges in Great Britain for the year ended March 31, 1906, furnishes a considerable mass of information on the working of the several institutions, regarded from the point of view of the Government Visitors. The form of the return, however, makes it difficult to get at a comparative view; and it may be suggested whether the returns could not be arranged upon a uniform plan, more or less roughly at least. The gaps in the information would then appear more clearly, and eventually perhaps be filled up so as to disappear altogether. The Report is very belated, too: why should it take a whole year to reach the public? Evidently, notwithstanding the increased grant of £100,000, many desirable and even urgent developments are postponed for want of the necessary money. The grant must really be enlarged, and considerably enlarged, even at the expense of savings on some less fundamental matters, unless private beneficence set in more liberally in the direction of the higher education. A more systematic Report, we apprehend, would reveal startling inequalities, insufficiencies, and actual blanks.

The Conference on the Teaching of Hygiene and Temperance in the universities and schools of the Empire attracted many educational experts and medical authorities, as well as some of the Colonial Premiers and Ministers now in England. Apparently the larger colonies have little or nothing to learn from the mother country on this subject. Mr. Deakin stated that the importance of the teaching of hygiene and temperance is not only recognized, but acted upon as a matter of administration, throughout Australia; and Sir Philip Jones testified to the value of the practical results. Mr. James L. Hughes, Chief Inspector of Schools, Toronto, was able to point with pride to twenty years' experience in the schools of the province of Ontario, where a special manual is used, and the instruction is given by the regular teachers in the regular course, to the general satisfaction of

everybody. Sir John Gorst naturally seized the opportunity of denouncing the obstacles of ignorance and selfishness—the ignorance that keeps the windows of railway carriages and bedrooms closed against the entrance of fresh air, and makes frequenters of theatres, ball-rooms, and dining-rooms oblivious to the fact that "the body requires to be fed with oxygen as much as with music and champagne"; and the selfishness of Local Authorities that "are of opinion that it is far better to let the child population starve than to run the risk of having to pay for their food." Sir Victor Horsley, who dealt specially with secondary schools, demanded the introduction of "salutary reforms into the Board of Education: there should be an anthropometric survey of the children, medical inspection, and the collecting of all the available facts of every school for the benefit of the Minister of Education." We can readily agree with the resolutions requiring (1) the teaching of hygiene and temperance to be constituted an essential part of the curriculum of all children, and (2) the establishment of a medical department of the Board of Education. But it is to be hoped that the anthropometric survey will be placed in charge, not of a medical man, but of a man of science, both theoretically and practically experienced. The Conference should have rewarding results.

The Carnegie Institute at Pittsburg, which has just been dedicated, began by the establishment of a library, which subsequently was much enlarged, and then supplemented with a department of fine arts, a museum of natural history, a school of music, and finally technical schools. The building covers 4 acres, and is surmounted by an imposing dome, while the frieze bears the names of men of intellectual distinction. The library contains some 250,000 volumes; it has 153 agencies in Pittsburg for the free distribution of books; and it maintains a school of children's librarians, for whom there is a strong demand in the United States. The museum ranks among the four leading museums of the country; it sends out exploring expeditions; it contains a collection of 25,000 birds, over a million entomological specimens, &c.; and it has a staff of 50 experts. The art gallery contains a representative collection of paintings and sculpture, and holds an annual international exhibition, which attracts paintings from all parts of the world. The music hall has for its principal attraction a symphony orchestra that rivals those of New York and Boston. The technical schools are about two years old. They are built on a site of 32 acres gifted by the city of Pittsburg. There really ought to be a good deal to show for four or five millions of money.

"Cookery classes are too ludicrous for words," says a correspondent of one of our Yorkshire contemporaries. "There is, of course," he goes on to say, "a great difference between an up-to-date 'batterie de cuisine' and a workman's kitchen oven, and, no doubt, an equally great difference between the contents of a cottager's larder and a County Council provided larder, though it is quite in keeping with the ideas of the faddist to teach the future housewife how to cook things she will never be able to buy in things she will never be able to get. Moreover, it is to be feared that the culinary art in English rural districts and elsewhere has altogether disappeared since the advent of the teapot." There is, we suspect, only too much truth in the criticism. The Special Report of the Chief Woman Inspector of the Board of Education on the Teaching of Cookery to Public Elementary-School Children in England and Wales—the first special report on the subject—comes opportunely, and it costs but twopence (Wyman). It is a remarkably keen and sensible document; and prefixed to it is a long official Memorandum, which shows that it has made a profound impression at headquarters. "It is believed," writes Mr. Morant, "that the very bad state of things, in many places, that is revealed in the Special Report will fully justify in the minds of readers the somewhat drastic changes which the Board have found it necessary to insist upon in order to prevent a continuance of what has, in many cases, been a serious waste of public money and a futile waste of time and teaching power upon lines that made it almost impossible for the children to obtain any practical benefits from the so-called Instruction in Cookery to which they were submitted." We refrain from details. See the Report itself. What an amazing lack of the simplest common sense in what may be regarded as the most fundamentally important subject in the practical education of girls!

The Scottish Provincial Committees, whose recommendations on the courses of training for teachers we print in another column, exhibit a gratifying resolution to maintain the high standard of Scottish professional equipment. They lay marked stress upon theoretical and historical knowledge as well as upon methods and practice. Notwithstanding the natural philosophic turn of the probable students, they impose 150 hours' instruction in Psychology, Logic, and Ethics with Experimental and Observational Psychology as "an integral part of the course"; and they supplement the history of educational theories and systems with a consideration of present-day educational problems in other countries of the world. The eyes of a fool are in the ends of the earth, no doubt; but we are very sure that students will find in the remotest of these studies an abundant reward, personal and professional. We observe also with satisfaction that strict care is applied to the co-ordination of the general knowledge courses, so as to render them really fruitful. The graduated system of "bursary" allowances, running from £30 to £5, may seem strangely inadequate when one thinks of Oxford or Cambridge expenses, but it corresponds roughly with the bursary scale of the Northern Universities, and is generally sufficient. According to the amount of the pecuniary allowances made a student, a period of service is exacted—two, three, four, or five years—or else repayment in proportion to the length of service unfulfilled. There has been much difficulty in England over this point, especially in the case of women teachers getting married and leaving the profession. If it is more or less natural, this practice is none the less troublesome and wasteful, and in any case the expenditure on training ought to be substantially repaid.

SUMMARY OF THE MONTH.

The Federal Council on Education will be held in Caxton Hall from May 24 to June 1 inclusive. Representation from the following Colonial Education Departments has already been notified:—Ontario, Quebec, Nova Scotia, New Brunswick, Manitoba, British Columbia, Alberta, Saskatchewan, New South Wales, South Australia, Victoria, Western Australia, Tasmania, New Zealand, Cape Colony, Transvaal, Orange River Colony, Bengal, Madras, Bombay, United Provinces, Central Provinces, Burma, Hongkong, Ceylon, Southern Nigeria, Gambia, Gold Coast Colony, Seychelles, Straits Settlements, Basutoland, the Bahamas, and the Falkland Islands. Other appointments are under consideration. Twenty universities are sending their Vice-Chancellors, Principals, or other distinguished members, whilst the Museums, the Committee on Visual Instruction at the Colonial Office, and all the great educational bodies have delegates appointed. The Board of Education will be fully represented, and both the Vice-President of the Department of Agriculture and Technical Instruction and the Resident Commissioner of the Irish National Board will be present on the part of Ireland. In addition to the educational programme, a scheme for the federation of the Empire in education will be laid before the Conference, as will also the first proofs of the graded series of Imperial text-books and atlases, in the issuing of which the Education Departments throughout the Empire are affording advice and help. To widen the scope of the influence of the Conference, the Education Authorities and Universities throughout the United Kingdom are being approached. Cambridge University has thrown open its Senate House for a public meeting. The Chairman of the Education Committee of the London County Council has brought the matter of co-operation before the Council, and it is hoped that arrangements may be made for receiving the delegates at as many centres as possible throughout the country.

The Irish Roman Catholic Bishops at Maynooth (April 16) formulated an important statement setting forth their attitude on the Irish University question as it at present stands. Amongst other things they say:

In our Memorandum sent in to the Royal Commission on Trinity College, Dublin, and the University of Dublin [July 25, 1906] we stated that in our opinion the Catholics of Ireland would be prepared to accept any one of three plans of settlement of the University question. That is still our belief, but at the same time we feel that the Government, having in the exercise of its undoubted right made its choice among these plans, it is our duty loyally and fairly to meet them and give their proposals our most friendly and sympathetic consideration. In the course of the deliberations of the Royal Commission it was suggested that the phraseology which we used in our Memorandum implied that we would accept a college either in the Royal University or in the University of Dublin merely as an instalment of our claims, and would use any concession of the kind as a starting-point for further agitation. We desire to state that our meaning was quite different. We intended then to convey, and we desire now to state expressly, that, given an adequate and worthy solution on any of the three plans which we put forward, we are prepared to accept it as final, and, as far as we are concerned, the end of the agitation which we have so long maintained. We recognize that this assurance is due to Parliament as a condition of legislation. Questions so large and so complex as that of University education in Ireland must be settled, if at all, by a compromise which means concession on both sides. On the supposition, then, that the Government gives us an adequate and worthy scheme on any one of the three plans which we put before the recent Royal Commission, we for our part shall be prepared to accept it as final, and as the settlement in our time of the Irish University question.

A memorial has been presented to the Chief Secretary for Ireland from Principals, Professors, and Lecturers in the four Scottish Universities in regard to the proposed reconstitution of the University of Dublin. The memorial is non-political. The memorialists are "actuated solely by academic reasons and in no spirit of hostility to the Government." They regard with repugnance the proposal to sever the intimate and historic connexion between the College and the University, and to destroy the identity and independence of an institution which has contributed so much in the past to the advancement of knowledge and the spread of higher education not only in Ireland but throughout the Empire at large. They do not think that an ancient seat of learning, justly proud of its past and present usefulness, should be forced against its will into a federation which it believes would be destructive of its prestige and its efficiency. Apart from these considerations, they do not consider that a federation of widely separated colleges under the University of Dublin is a solution of the Irish University problem which is likely to achieve any measure of success. The memorial is presented in no spirit of antagonism to reasonable claims of the Roman Catholics of Ireland in repect to university education. The concern of the memorialists is entirely with the preservation of the University of Dublin and Trinity College.

A similar memorial has been presented also by the members of the Senate of the University of Wales, by seventy-three Professors and other teachers of the University of Sheffield, and other educational bodies.

The Executive Committee of the English Association has issued, in revised form, the prospectus of the Association for 1907, including a statement of its constitution, objects, and methods. The Master of Trinity has been elected first President. A Sub-Committee has been appointed to deal with the publications of the Association, which for the present will be mainly leaflets. Local branches of the Association are being formed at Liverpool, Birmingham, and Bristol. All correspondence relating to local branches (except in Scotland) should be addressed to Mr. G. E. S. Coxhead, M.A., The Grammar School, Hinckley. The Scottish Branch has held meetings in Edinburgh, Dundee, and other centres. The Hon. Secretary is Mr. J. I. Low, M.A., The High School, Stirling. Copies of the prospectus of the Association and forms of application for membership (otherwise than through the local branches) can be obtained from the Hon. Secretary, Miss J. Laidler, M.A., Goldsmiths' College, New Cross. Other communications should be addressed to the Hon. General Secretary, Prof. F. S. Boas, M.A., Cranford, Bickley, Kent.

The Secular Education League, which has just been formed, aims at binding together in one effective organization all who favour the "secular solution" of the education problem, without reference to any other convictions—political, social, or religious—that they may entertain. The fundamental principle of the League is expressed in the resolution that was carried at the inaugural meeting, which took place at the *Tribune* Rendezvous on February 4:—

That this meeting, recognizing that the sole responsibility for religious education rests with parents and Churches, expresses its conviction that there can be no final solution of the religious difficulty in national education until the Education Act is amended so as to secure that there shall be no teaching of religion in State-supported elementary schools in school hours or at the public expense.

Mr. H. Snell, 12 Leighton Grove, N.W., is the honorary secretary.

The Executive Committee of the British Committee for the promotion of Moral Instruction and Training in Schools has adopted a plan of inquiry (February 5). The inquiry, it is suggested, should have reference to moral instruction and training in elementary and secondary schools, training colleges, continuation classes, and industrial and reformatory schools in Great Britain and Ireland, Canada, Australia and New Zealand, the United States of America, France, Germany, Switzerland, Denmark, and Japan. Of these branches of the inquiry, the American Committee will undertake the United States and Japan; the British Committee will undertake Great Britain and Ireland and the British Colonies; the two Committees will co-operate in securing reports from the other European countries named, but, for convenience, the planning of the investigations in those countries will be entrusted to the British Committee. So far as the work of the British Committee is concerned, it is proposed (1) to invite communications from all members of the Advisory Council, as representing a wide variety of educational experience; (2) to commission investigators to report upon methods of moral training in the schools of Great Britain and Ireland, France, Germany, Switzerland, and Denmark; and (3) to obtain reports from experienced colonial teachers or administrators. The reports thus received, together with those furnished by the American Committee, would be published in due course. It is desirable to ascertain how far, under present systems of administration, each school, elementary and secondary, is free to develop a corporate life of its own, and so to exert its influence upon the pupils as to train in them a sense of personal respons-

ibility and to attach them to a way of life. Inquiry should also be made as to how far the schools connect their work with the pupils' subsequent duties in life, and how far they succeed in cultivating a sense of civic and national obligation. The British section of the inquiry is estimated to cost £1,000. Contributions should be sent to the Right Hon. Lord Avebury and J. Martin White, Esq., 1 Cumberland Place, Regent's Park, London.

Principal Griffiths (South Wales), Principal Reichel (North Wales), and over fifty professors and heads of departments in the constituent Colleges of the University of Wales have signed a memorial to Mr. Birrell urging that "the ends of higher education can best be promoted in Ireland by the maintenance of independent universities, and their co-operation from time to time on such common ground as is indicated by all the members of the Royal Commission. . . . Trinity College, like the University of Wales, accepts the principle of the freedom of study and research from ecclesiastical limitations and denominational supervision. We cannot view without grave apprehension the introduction into the University of Dublin of influences which are antagonistic to this principle, and we fail to see how under such conditions the prestige of its degrees could be maintained." Principal Roberts (Aberystwyth) and five professors, in a note appended to the memorial, say: "Whilst unable to concur in all the reasoning contained in this memorial, we desire to join in expressing the view that to deprive so ancient and illustrious an institution as Trinity College, Dublin, of its autonomy would be a serious misfortune for the cause of education and the advancement of knowledge."

At the monthly meeting of the Royal Meteorological Society (April 17) a paper by Mr. R. L. Holmes on "The Phenomenal Rainfall in Suva, Fiji," August 8, 1906, was read. Unfortunately the exact amount had to be, in part, estimated, owing to the observer's failing to measure the fall at intervals during the night. The measurements show over 37 inches, without taking into account the overflowings—an unknown quantity. As the gauge was 25 feet above the ground, Mr. Holmes is of opinion that the rainfall should be increased by about 11 per cent., so that the total fall must have been fully 41 inches in about thirteen hours, which he thinks surpasses anything that has been recorded in any other part of the world for so short a space of time. Mr. R. Strachan read a paper on "The Temperature around the British Islands in relation to the Gulf Stream." This was based on observations made in the year 1906 which have been published by the Meteorological Office. Around the British coasts the temperature of the air was lowest in February, and highest in August; the temperature of the sea corresponded to these epochs, with slight interruptions, having been lowest in January for the west and central, in March for the south, and highest in September for the north, and in July for the east, positions. The water in the Strait of Florida was about 30 deg. warmer than the sea at the north of Scotland.

The National Society opened (April 15) the hostel it has established at Grove Park for Churchwomen students in connexion with the Day Training Department of Goldsmiths' College. The house has a large and attractive garden and wide views over the surrounding country, and has separate cubicle accommodation for thirty students. The fee for board, lodging, and medical attendance is to be £10 a year (supplemented by the Government grant, which is paid direct to the hostel), and there will be an additional charge of £1 a term towards the expenses of railway transit between Grove Park and Goldsmiths' College and laundry.

The Council of the Association of Teachers in Technical Institutions recently appointed a committee to report upon the mathematical syllabuses of the Board of Education, and the recommendations of the committee have been embodied in an "outline of suggested syllabuses" which has been sent by the Council to the Secretary of the Board of Education. Several principles guided the Council in drawing up its suggestions. It urges that there should be a progressive development in pure geometry, analytical geometry, and analysis in each of the six stages into which the examinations of the Board are divided; that the six stages should give a homogeneous and comprehensive education in the main principles of the science; and that the course of work for honours examinations should be such as to place the student in a position to undertake original investigations should he desire to do so. It is a hopeful sign (says *Nature*) that teachers are able to lay before the Board of Education their views as to what it is reasonable and desirable to expect of candidates in examinations, and we have no doubt the Board will give the suggestions the consideration they deserve.

Referring to some unsolved problems of the primary school, the President of the N.U.T., in his inaugural address at Oxford, said we are but on the threshold of a science of education. We want experiments tried in selected schools, with far more active and constructive work in the curriculum, with much more physical training, and with a simpler course in certain other subjects. We want more handicraft for boys throughout the whole school, instead of the small amount of manual instruction a few lads get now; and more systematic training in housecraft for girls, instead of the snippety cookery classes so often arranged primarily (owing to the uneducational regulations of the Board) with a view to the earning of grants. But to do this we must continue to urge the three most needed administrative reforms:—(1) a reduction in the size of large classes, (2) every class under the charge of a fully qualified teacher, (3) abolition of factory half-time and of rural early employment, for a longer school life and a happier child life before the hurly-burly of work began; and, as a condition precedent to reform, especially in heavily rated areas, a complete alteration of the basis of Imperial aid and a revision of the incidence of taxation are urgently necessary.

The new extension of the Kingston (Yeovil County) School was opened by the Rt. Hon. Henry Hobhouse, Chairman of the County Council (April 18). The buildings now accommodate not only a secondary school, but also an institute for instruction in scientific and technical subjects, and a school of art; and it is in contemplation to establish a pupil-teachers' centre. Mr. Hobhouse pointed to the institution as a living example of the value of co-operation between the County Council and the Local Authorities, the necessary funds (£8,346) having been contributed jointly by the County Council, the Town Council, and the Free School Trustees.

At a recent meeting of the English section of the Polyglot Club (24 Hart Street) Dr. R. A. Williams lectured on "Phonetics as a Science and an Art," Prof. J. G. Robertson in the chair. He claimed that as a science the subject deserved popularity, not only on account of its interesting matter, but also on account of its results, which have superseded the fragmentary and inaccurate knowledge of speech-sounds handed down to us by the great nations of antiquity. In treating of phonetics as an art, he drew attention more especially to the great benefits that arise for the student in the application of the phonetic method to the practical study of foreign languages. Mr. H. Bidon-Steele said that, from his own experience as a flat-dweller, he could strongly endorse the lecturer's statement that control over the vocal organs was not possessed by the human young, but had to be acquired.

At a recent meeting of the Incorporated Association of Head Masters, Branch II., held at Russell Hill School, Purley, Canon Swallow read a paper on "Schools and the Inspectorate," in the course of which he recommended a system of dual reports on the lines of the Oxford and Cambridge Schools Examination Board—one, peculiarly scholastic, for the head master and governors; another, more general, for publication by the Local Authority. A resolution to this effect was passed.

From the tables appended to the recent report of the Cambridge Local Examinations and Lectures Syndicate it appears that the girls show a higher percentage of passes than the boys at all ages save in the class for "not under nineteen," where the boys have beaten them since 1898; but the proportion of sexes in this class is nothing like equal, as last year, for instance, 436 girls were examined to 232 boys, and the percentages of passes in the class were 31·9 boys to 28·2 girls. It is noted that in the compulsory section of the examinations the girls wrote better than the boys and in dictation the girls attained a higher standard than the boys.

Notice has been given of an application to be made to the Secretary for Scotland for a provisional order under the Private Bill Procedure (Scotland) Act for the transfer of the training Colleges. The purposes as set forth in the order are to incorporate the committees of the Universities of Edinburgh, Glasgow, Aberdeen, and St. Andrews, for the training of teachers,

under the minute of Committee of Council on Education dated January 30, 1905; to grant authority to the Church of Scotland and the United Free Church to transfer their colleges to the said committees; and to authorize the committees to make provision for the affording of religious instruction in the colleges, either by the Churches or other body of management, in terms of agreements to be made with the Churches.

The General Synod of the Irish Protestant Church, at a meeting held in Dublin (April 10), the Protestant Archbishop of Dublin presiding, passed unanimously the following resolution:—

That, as the Estimates presented to Parliament provide a sum of upwards of £2,000,000 for public education in Scotland, and only £1,400,000 for Ireland, while the population of Ireland and the number of children to be educated in Ireland are practically equal So the corresponding numbers in Scotland, this Synod is of opinion that it is the duty of His Majesty's Government to provide by supplemental Estimate, or otherwise, within the current financial year, such additional amount for education in Ireland as may be required to bring the grants for education to the same ratio to the population as the grants already provided for England and Scotland bear to the respective populations of those countries.

Mr. Arthur Samuels, K.C., in seconding the motion, said the development grant was a fraud and a humbug, because it was based on the assumption that what England was getting and what Scotland was getting for a whole year was £1,400,000, whereas, as a matter of fact, that was for half a year only, and the development grant should be twice as much. That grant could never develop anything; it was now absolutely bankrupt. The true basis of subvention was not population, but the needs of the different classes. This demand was in truth one of United Ireland.

Very important enlargements of the premises occupied by the University of Zürich and its scientific and clinical annexes (writes the Swiss correspondent of the *Lancet*) are being planned at a cost of about £300,000. The first series of buildings proposed by a scientific committee headed by the Professor of Zoology, Mr. Lang, will be commenced as soon as the necessary credit has been granted by public vote to the cantonal and town authorities. This series consists of a new University building which is to occupy a prominent position near the Federal Polytechnic School: it will be an imposing structure and is to cost £150,000. Next to it the Zoological Institute is to be erected at a cost of £57,000, and last, but not least, a new building for hygiene and bacteriology costing £26,000. There is some anxiety in University circles as to whether the inhabitants of the canton of Zürich, already burdened by heavy direct taxation, will grant these considerable sums of money, because later a further grant of some £60,000 will be required for new isolation wards and for the enlargement of the surgical wards and the Institute for Physical Therapeutics. The University of Zürich has at present 1,339 regular students and 336 *Auditoren* who only attend a few lectures. Of the 1,339 regular students only 576 are Swiss, the remaining 763, who, of course, form the majority, being foreigners. The Russian students are quite to the front with 455 male and female students, numbering just one-third of all the students.

The province of Saskatchewan is only eighteen months old, but already it is devoting its resources to the establishment of a State University. A Bill just introduced by the Provincial Government in the Legislative Assembly at Regina provides for the incorporation of such a University under a Chancellor, Convocation, Senate, Board of Governors, and Council. The number and nature of the faculties to be established will be decided by the University Senate. No religious tests will be required of the professors or students; but any affiliated college may make such provisions as it thinks proper in regard to the religious instruction and worship of its own students. The maintenance of the University is to be provided out of the general revenues of the province and by a percentage of the net receipts under the Succession Duties Ordinance.

Dr. Alexander Macbain, Head Master of the High School, Inverness, who died suddenly (April 5), was a distinguished Celtic scholar. Born in 1855, he was educated at the Grammar School of Old Aberdeen and at Aberdeen University, where he obtained his M.A. degree. In 1885 he published his book on Celtic Mythology and Religion, and some eleven years later his Etymological Dictionary of the Gaelic Language. In appreciation of his distinction as a Celtic writer he received the honorary degree of LL.D. of Aberdeen University and a Civil List pension of £90 a year.

UNIVERSITIES AND COLLEGES.

London. The accommodation at University College for the Schools of Engineering and Architecture will be considerably extended before the beginning of next session (October) by the additional space available through the removal of University College School to Hampstead. Full courses for University of London degrees in Engineering and in Architecture are given at University College and occupy three years. Students intending to enter the College in October should pass the Matriculation Examination in June or in September. One of the Andrews Scholarships (open May next) value £30, in Science and Mathematics, is tenable in the School of Engineering. Full particulars of courses and scholarships from the Secretary.

The University has conferred the following Doctorates:—D.Sc. in Chemistry (internal) on Mr. F. P. Leach, of the Royal College of Science, for a thesis entitled "The Reactions of Pinene and Limonene Nitrosochlorides," and other papers. D.Sc. (Economics, internal) on Mr. E. A. Lewis, of the London School of Economics, for a thesis entitled "The Growth and Development of the Municipal Element in the Principality of North Wales, 1284–1536," and other papers. D.D. (external) on Mr. H. H. Scullard, for a thesis entitled "Early Christian Ethics in the West, from Clement to Ambrose," and an essay entitled "St. Martin of Tours." D.Lit. (external) on Mr. J. H. E. Crees, for a thesis entitled "Claudian as an Historical Authority."

Durham. The draft Bill for the reconstitution of the University, if carried, will enlarge the scope and importance of the Newcastle Colleges, which will then be able to confer degrees in Arts on their students. It provides that these Colleges shall have a more equal representation with the Durham Colleges on the Senate of the University. It proposes that, instead of a Warden, there shall be a Chancellor at the head of the University, the present Warden to be the first Chancellor. It provides that the Dean and Chapter of Durham shall cease to be governors, and that the Senate shall consist of the Dean of Durham, the Professors of Divinity and Greek, 3 other members elected by the College in Durham city, 6 appointed from the Durham professors and tutors, 4 from the College of Medicine at Newcastle, four from the Armstrong College, 4 from the professors of Armstrong College, 6 appointed by Convocation (of whom 3 shall be Durham and 3 Newcastle men), and 6 appointed by the Crown and the Chancellor—a total of 37 members, as against 17 at present. The Durham City College, the Armstrong College, and the College of Medicine will each appoint a Council to govern their several colleges independently. Provision is made that the Durham Colleges shall pay to Armstrong College £1,260 a year, together with such portion of an income as shall be derived from the sum of £4,529 invested in railway stocks, and shall pay to the College of Medicine the income arising from another sum of £3,800 also invested in railway stock. It is proposed that Convocation and other fees shall go into a fund, from which there shall be paid £800 a year to Durham College and £400 a year to the College of Medicine. The final clauses provide that the headquarters of the University shall continue at Durham for the next ten years, and after that where the Senate may determine.

Cardiff. Considerable excitement has been raised by a proposal that the City Education Authority should build a new Technical and Art School in Cathays Park. Under a ten years' agreement with the University College—made in 1889 and renewed year by year since 1899—the work of technical education has been done in the College buildings under the control of the College Council in conjunction with the Technical Committee; and, meantime, the number of students has risen from about 700 to over 3,000. The promoters think it would be more economical to start a new institution than to go on paying £6,055 a year under the present agreement. The objectors think otherwise; and, on principle, they maintain that there is no room for two technical schools in Cardiff.

THE EDUCATIONAL LADDER.

Girton College, Cambridge.—Entrance scholarships and exhibitions have been awarded on the results of the March examinations as follows, in order of merit:—The Clothworkers' Scholarship of £60 for three years and an additional term to E. E. Power, Oxford High School (History); a college scholarship of £50 to E. M. Steuart, North London Collegiate School (Classics); the Sir Francis Goldsmid Scholarship, £50, to M. L. Harvey, St. Leonard's School, St. Andrews (English and French); the Barbara Leigh Smith Bodichon Scholarship, £40, to E. M. Cull, Norwich High School, and a college scholarship of £40 to A. B. D. Finney (private tuition), bracketed equal in Mathematics; a Pfeiffer Scholarship of £30 to E. Branson, Notting Hill High School (Natural Sciences); college scholarships of £30 to E. V. Odom, Queen Elizabeth School, Mansfield (English and French); to P. B. Mudie Cooke, Notting Hill High School (Classics); to E. A. d'Auquier, St. Elphin's School, Darley Dale (Classics). College exhibitions of £15 to K. D. Hothersall, Manchester High School (Classics); A. Heath, King Edward High School, Birmingham (History); K. W. Angell, James Allen School, Dulwich (Natural Sciences); J. M. Earle, Croydon High School (Mathematics), and C. Morrison, Manchester High School (German and French), bracketed equal; E. M. Pugh, Clapham High School (Mathematics), and E. Rowbotham, Blackheath High School (Classics), bracketed equal. The above scholarships and exhibitions are tenable for three years from October, 1907.

Lady Margaret Hall, Oxford.—The following scholarships have been awarded:—To Ruth E. Peel, Bedford High School, the James Cropper Scholarship of £50 a year for three years (Modern History); to Lucy D. Baynes, Manchester High School and University, a Jephson Scholarship of £45 (Classics); to Marion Holt, Clapham High School, a scholarship of £35 (English Literature); to Daphne M. Werry, Church of England College, Edgbaston, one of £30 (Modern History).

St. Hugh's Hall, Oxford.—The following scholarships have been awarded:—The Ottley Scholarship of £40 a year for three years to Mary Tree, Worcester High School (Mathematics); a scholarship of £35 to Barbara L. P. Lindsay, St. Anne's, Abbot's Bromley (Modern History); the Old Students' Scholarship of £30 to Alison C. Dobbs, Wimbledon High School and 270 Boulevard Raspail, Paris (French); a scholarship of £25 to Rose M. Wildy, Highbury and Islington High School (English Literature).

Eton.—Newcastle Scholarship: Robertson, K.S., scholar; Finlay ma., K.S., medallist. Select: Moss, K.S., Wilder Divinity Prizeman, and Walters, K.S. (bracketed); Grenfell, Anderson, Bainbrigge, K.S., Earl, Prior ma., K.S., and Mitchison (bracketed); Bigg-Wither, K.S., Majolier, Wernher, A. W. Verrall, and F. G. Kenyon. Robertson obtained the first prize in the divinity examination, but was not eligible for the Wilder Divinity Prize.

Harrow.—Entrance scholarships for Classics: R. C. Boyd, from Mr. A. H. Evans, Horris Hill, Newton, Newbury; W. P. Colyer Fergusson, from Rev. Dr. Williams', Summer Fields, Oxford; C. E. Bland, from Rev. W. G. Price's, Bowden House, Harrow; M. R. K. Burge, from Rev. Vernon Royle's, Stanmore Park, Stanmore; J. B. Webb, from Rev. Vernon Royle's. For Mathematics: H. G. Wimbush, from Rev. E. F. Miller's and Rev. F. F. Hort's, The Knoll, Woburn Sands; A. S. Fortescue Fox, from Mr. J. Watson Willis's, Glengorse, Meads, Eastbourne; G. H. Pollock, from Mr. W. R. Morton Clarke's, Blatchington Place, Seaford, Sussex.

Oakham.—Scholarships: (1) G. O. V. Williams (Mr. Rudd's, Stoneygate); (2, equal) W. J. H. Ellwood (Mr. Tabor's, Cheam), B. Moseley (Oakham School), J. L. Andrews (Oakham School).

St. Bees School.—Scholarships and exhibitions (in order of merit): D. J. Wardley (Mr. T. J. Ogden, Normanton School, Buxton), C. K. Hughes (Mr. J. H. Castley, Durham, and St. Bees School), J. E. P. Rae (Mr. A. G. Grenfell, Mostyn House, Parkgate, Chester), B. D. Plummer (Messrs. Moore and Drinkwater, Harrogate, and St. Bees School), H. J. Harris (Devon County School), J. L. I. Hawkesworth (Mr. W. Snow, Craig Preparatory School, Windermere), W. C. S. Wood (Mr. A. G. Grenfell, Mostyn House, Parkgate), J. C. Preston (St. Bees School), H. A. L. Ostrehan (St. Michael's College, Tenbury), J. Broadbent (Mr. B. Thompson, Sandy Knoll, St. Anne's-on-Sea), C. F. Ingledow (St. Bees School), L. C. T. Watson (Gosforth Voluntary School), A. E. Beall (Mr. G. Atkinson, The Limes, Croydon), C. Harvey (Bookwell Schools, Egremont), W. P. Simpson (Bookwell Schools, Egremont).

Worcester, King's School.—Entrance exhibitions—Senior Clerical: S. Kingdom (Messrs. Liddell and Lang, Leamington); Junior: (1) A. J. H. Blanch (Westcliff High School, Blackpool), (2) R. L. Thrupp (home tuition).

WHITEHALL AND SECONDARY EDUCATION.

CRITICISMS FROM THE OXFORD CONFERENCE.

In his Presidential Address to the N.U.T. Conference held at Oxford last month, Mr. A. R. Pickles, B.A. Lond., hon. M.A. Oxon., Head Master of the Burnley Wood Council School, Burnley, remarked, with much frankness, upon the administration of the secondary schools system by the Board of Education. He said:

The Higher Education Policy at Whitehall.

In 1894 the then President of the National Union of Teachers, Mr. Ernest Gray, M.A., welcomed the appointment of a Royal Commission on Secondary Education. Commenting upon the work of this Commission, the President of Magdalen, now Vice-Chancellor of Oxford University, said: "We are going to make another great effort to organize education, and to organize it on democratic lines and in the interests of the democracy. The object proposed is to provide, over the whole country, secondary education *for all who may desire and deserve it*, and, doubtless, to provide it in such a way that, if it is not absolutely free, still it shall be *practically within the reach of all*." Were this admirable sentiment the motive force of the Board of Education's secondary officials, Local Education Authorities would not be in that frame of justifiable anger and paralysing unrest which has irritated so many of them of late. With every desire to persuade and propitiate, rather than to offend or alienate, one is compelled to say quite frankly that the administration of the secondary branch of the Board of Education is thwarting and hindering the higher educational interests of the children of the working classes. Since the time of the Cockerton judgment endeavours have been systematically made to conserve the public supply of higher education as a social, rather than as a national, provision. The officials of the Board have been far more concerned about regalvanizing existing grammar schools than about developing good municipal secondary education.

Let me say that some of the work of the secondary branch has been distinctly good. It is an excellent thing to provide increased grants from the Treasury for efficient secondary schools, to set up a four years' course from about the age of twelve, to give greater liberty of curriculum, and to require a certain proportion of newly appointed teachers to have gone through a recognized course of training. But concurrently with these improvements there has been a deliberate attempt to "fend off" from the secondary schools proper all but a few of the children of the workers, and to secure the larger secondary grants for schools in most cases already charging a high fee, and not seldom endowed with money originally left for the education of the poor.

Notice the stages in this prolonged and insidious attack. In 1900 the Board of Education issued a miserably inadequate Higher Elementary Minute, and attempted to turn all the higher-grade Board schools into higher elementary schools with reduced grants and a narrower curriculum; in many cases it is only by the insistence and persistence of the Local Authorities that they have retained their usefulness as municipal secondary schools.

Fees and Scholarships in Secondary Schools.

The next attack was upon the question of fees and scholarships. An endeavour was made to fix a minimum fee of £3 a year in all secondary schools, and to restrict Local Authorities in the award of scholarships, some of the officials and Inspectors of the Board knowing full well that to do this would injure the schools and diminish the chances of higher education for the poor man's child. Freedom was secured to the Authorities only by the strong representations of the Association of Education Committees and its Chairman, Mr. Tudor Walters, M.P., and by the representations of the National Union of Teachers through its Parliamentary machinery. But much of the mischief was already done. Of 685 secondary schools recognized in 1905–6, 4 are wholly free, and only 28 charge a fee of less than £3 a year; 46 have a fee of £3 a year; no less than 607 schools out of the 685 charge a fee of more than £3 a year; and 77 schools out of the

607 have a fee exceeding £13 a year. Despite the laudable desire of many Local Authorities to provide good secondary education, at a small cost to the parent, for those children who "desire and deserve it," the whole policy of the Board tends to make a secondary school one which is not attended by the children of the people, unless they are scholarship holders. The thing done avails—not what is said about it.

Let me take one illustrative case only of the scores that could be cited. The Board urged the Warwick Education Authority to adopt a high fee, which would have had the effect of excluding a large number of poor scholars in future, and this in a town in which no less than £40,000 of charity money has been devoted to the building and endowment of secondary schools. The Board further seriously proposed that Warwick should send all its poorer children to the Leamington Secondary School, and that the King's School, Warwick—supported by public funds—should be reserved for children entering the Army, the learned professions, and the older universities. The governors felt that a great injustice was being attempted by the narrow and exclusive spirit of the higher officials of the Board of Education, and, after a long struggle, they defeated the unjust proposal.

It is not strange that the Head Masters' Conference—a conference of the heads of the public schools—should talk of "resistance to the steam-roller of centralized administration." The Board takes upon itself too much. It is becoming a universal foster-mother—I had almost said grandmother—and undertaking duties it is unable to perform satisfactorily. It would do far better to act up to the spirit of its own report, which says: "The limit of useful State control is to be found at the point where it ceases to be an expanding and stimulating force, and tends to fetter or sterilize."

Prejudice against the Primary Teacher.

"The training and experience of teachers in elementary schools appear to be, in the eyes of the secondary officials of the Board of Education, a positive disqualification for taking a position in a secondary school." Mr. Pickles cited an illustration from a report to the Board, and said: "The class taint in these reports is a discredit to those who penned them, as well as to the Board of Education which issued them. It is a distinct pleasure to be able to say that the tolerant and broad-minded secondary teacher himself condemns the tone and temper of such reports in language much more pungent than parliamentary. . . ."

Secondary Schools doing Elementary Work.

It is argued that the secondary school must be sharply discriminated from the higher elementary school because the former provides an education up to at least sixteen years of age, whilst the higher elementary child leaves at fifteen at the latest. People who want to bring down a house will always push their crowbar into what looks like a promising chink. Suppose we turn for a moment to the secondary schools themselves. According to the latest returns of the Board of Education—which are, of course, thoroughly reliable, if not always up to date—there were in all 94,698 scholars in recognized secondary schools. 59,848 were registered in the four years' course, and of these only 10,178 were in the third year, and but 4,337 in the fourth year. It is quite true that there were as many as 2,742 pupils above the four years' course, but there were 32,108 pupils below those taking the four years' course. You remember how Mr. Birrell once asked a small boy in Liverpool if he could tell where elementary education ends, and where secondary education begins, and how the laddie had a ready answer. He said: "Vulgar fractions is elementary, and decimals is secondary." The figures—the official figures—supplied by the Board of Education show that very few pupils remain in the secondary schools to sixteen years of age or beyond, and, with 32,108 pupils out of 94,698, or one pupil out of every three in secondary schools doing elementary work, it is Alpine presumption to call some of the education by the term "secondary." But is it not recorded in one of the numerous and valuable returns which the Board has compiled that one Principal wrote indignantly to the Board in reply to a query as to the provision of secondary education: "My school is not a secondary school; all the education given in it is *first class*"?

Unfair Condemnation of Pupil-Teacher Centres.

But this astute Board has had a heaven-sent inspiration. It has discovered a new source of supply to the secondary schools, and is making use of whatever audacity can dare and subtlety contrive to close down pupil-teacher centres, transferring the boys to the more cultured atmosphere of the grammar school, and the girls to the more refining influence of the girls' high school. I speak of audacity and subtlety because, in order to effect its purpose, the Board has attacked a centre here, and another there, working beneath the surface like a mole, putting pressure upon the Local Authorities through its Inspectors, and avoiding a frank and open declaration of its policy. I do not here and now offer any comment upon the suitability of these grammar and high schools to take over the instruction of pupil-teachers. Especially would I say that, owing to the greater enthusiasm of the women for training and teaching equipment, the girls' high schools are generally performing an important educational work with admirable thoroughness and zeal. Yet it is admitted in very high quarters that the training of pupil-teachers in special classes attached to secondary schools is working so badly that even its advocates allow that it is breaking down. The attempt to compel Local Authorities to close down admirable centres with specially trained and qualified teachers is made ostensibly on the plea that those intending to be teachers should be taught side by side with pupils who are to enter other professions, in order to avoid the grooviness which arises from segregation. The motive is commendable, and to insist that intending teachers shall, as a rule, go through the four years' course of a good secondary school is a wise provision. But secondary schools cannot provide adequately for pupil-teachers during their apprenticeship, without injury to their general students. Moreover, there are few other pupils over sixteen years of age with whom the pupil-teachers can be taught. Put the 20,000 pupil-teachers along with the 2,742 general pupils over sixteen, and you have the lion lying down inside the lamb. Let me further illustrate how imperfectly this segregation is avoided. Out of 97 cases where pupil-teachers form part of a secondary school, they are taught entirely apart from the other pupils in no less than 48 instances, mainly apart in 27 schools, sometimes apart in 3 schools, in 9 instances rarely apart, and in only 10 schools are they taught entirely along with other pupils.

If the transfer of pupil-teachers to secondary schools were from ill staffed and badly managed institutions to places of superior merit, there would be less cause to take exception. But see what the Board of Education itself says in its latest report about these self-same secondary schools:—

> In almost all of them, whatever their type, the staff of assistants is under-paid and over-worked. As a result, teachers with inadequate qualifications are entrusted with the instruction of children who, when they are grown men and women, should do the brain work of the nation. "It is clear that *an improved standard of teaching power* [the Board's own italics] in secondary schools is at the root of all improvements and developments. Whether the deficiency be in number, or in training, or in academic qualifications and teaching experience, the whole teaching staff in very few cases reaches the standard necessary for full efficiency. The introduction of pupil-teachers (into the secondary schools) has of course caused difficulties of organization. The new comers have brought new problems and responsibilities to the assistant staff. The result is that the staff needs an unusual amount of supervision and guidance if the important work undertaken is to be properly carried out.

On the Board's own showing, even if it were desirable to train all pupil-teachers in secondary schools, the schools themselves are not nearly ready to take up the work and do it efficiently.

Tampering with the Training Colleges.

If we look at the training college regulations, the restraining hand of the Board is again in evidence. Many training colleges, legitimately furthering the interests of their more capable students, have rationally promoted academic work during college days, and have set many a teacher on the way to a university degree. That fine product of Oxford, the late Matthew Arnold, consistently advocated this course, on the ground that there is no better way of raising the general level of intelligence in a community than by affording opportunities to some to rise above that level. Recently, however—gradually and piecemeal, article by article, regulation by regulation, the Board has placed such hindrances in the path of teachers and students as almost to drive training college authorities to abandon their higher work. It has, at the same time, in the opinion of many of those best able to judge, greatly lowered the standard for the Acting Teacher's Certificate. The Rev. Wesley Dennis, Principal of the Battersea Training College and President of the Association of Training College Principals and Lecturers, says: "Sweeping changes in the conditions under which we do our work are made without reference to us, or any attempt to make use of the in-

formation which we could and would willingly supply. Our unanimous recommendations are entirely ignored."

Mr. Pickles went on to complain of the practical exclusion of elementary teachers from the Inspectorate, to criticize caustically the report of the Consultative Committee on Higher Elementary Schools, to affirm roundly that "You cannot educate the child from Whitehall," and to demand a Council of Education.

A Council of Education wanted.

Meanwhile there is general agreement that the Board should command the advice and assistance of a properly constituted Council of Education, on the lines laid down by the Royal Commission in 1895. This Council should take the place of the present badly constituted and irresponsible Consultative Committee—a Committee which has no properly defined duties, and, as Dr. Gow recently said, is not representative of the teaching profession. . . . Teachers in all classes of schools appeal from the present Consultative Committee to a new Council of Education, which should consist of a responsible Minister, some chosen members of Parliament, a secretary, the higher Departmental officials, representatives of the universities, of Local Education Authorities, and of the labour element, with an adequate number of experts accredited by the various educational bodies; a thoroughly representative body which should be at once a Council of Education and a Board of Registration, so constituted as to command the full and complete confidence of the whole teaching profession. The present Consultative Committee has no initiative, and can only offer its opinion upon matters referred to it. A Council of Education should have its properly defined place in the educational scheme, and should be able to initiate reforms and improvements. Even so far back as 1895, the Head Masters' Conference, the Incorporated Association of Head Masters, the College of Preceptors, the Teachers' Guild, the Association of Private-school Masters, the great School Boards, and the National Union of Teachers were all agreed as to the necessity for such a Council, and they had the support of so experienced an Inspector as the late Sir Joshua Fitch. The demand is even more insistent to-day, despite the existence of the Consultative Committee, and it is noteworthy that "doubt of its expediency, anxious restriction of its scope, or explicit objection to it, proceeded only from officials, politicians, or jurists" (*vide* Report of Royal Commission on Secondary Education, 1895, pages 104–5).

The Minister of Education, who cannot always be a master of all matters educational, may often be in need of advice, and it is better that he should rely, not upon persons hopelessly out of touch with educational needs, not upon scattered counsels which distract and mislead, nor even mainly upon permanent officials who peer out on the schools from the windows of Whitehall, but upon a thoroughly representative body, acting deliberately and after discussion. Education is not a mere policy which a Department can direct and administer: it is a living art, and to practise it special knowledge and skill are required; the growing complexity of our social and national life is ever making new demands and creating new problems. The Council of Education should therefore be an educational authority in the highest sense, an authority which understands education not only on its legislative and administrative sides, but also in its actual and practical working.

As to the duties of such a Council, there is a large and important province in education which lies quite outside the field of Parliamentary politics. It could take into its ken the terms of admission to, and continuance in, the teaching profession; the training, certification, and registration of teachers; the most efficient methods under which schools can be inspected and examined; the reduction of the inordinate number of examinations which fetter the real education of pupils in higher schools; the modification of curricula in accordance with the best educational opinion of the day; the maintenance of some form of discipline within the profession; the problems of tenure between heads of schools and governing bodies, and between assistants and heads in secondary schools; the co-ordination of various types of schools, and the provision of a wide corridor between the primary and the secondary school; and it might even in time, as suggested by Dr. Rendall, become an ultimate court of appeal. It could be quite as useful in its place as the Army Council, the Naval Intelligence Department, or the India Council. It could complete the movement already well established for a real unification of all sections of the teaching profession. It could frame, form, and keep a new register of qualified teachers, the leading features of which would be (*a*) the fullest guarantee of professional preparation, (*b*) the requirement of a sufficiently high standard of academic attainment, and (*c*) the record of service, in whatever type of school or institution. It could ensure to Local Education Authorities a wide discretion within certain well defined limits to set up the system of schools they consider best for their own area.

Lay the Foundations Wide and Deep.

But, chiefly, a real and representative Council of Education could lay the foundations of secondary education wide and deep, could use endowments to the best purpose, and give every one, rich or poor, equality of opportunity, though "not even democracy can give every one equality of faculty." The essential thing at the present moment is to popularize secondary education; to make the lower middle and artisan classes feel that they have as great a part as anybody in our secondary schools. It is not enough to have a handful of scholarship children, sometimes cold-shouldered by the other pupils. The presence of boys and girls from the *earnest* classes—the classes that have to work hard—means a standard of effort that will far more than make up for the want of purple and fine linen. The brightest intellects of the whole nation should find their way not merely to the secondary schools, but right on to the great universities, there to be prepared for the professions, for the highest branches of industry and commerce, and especially for the leadership of the people. This is a great constructive work, which will well repay the expenditure of great thought and skilful organization.

CONFÉRENCES FRANÇAISES.

Société Nationale des Professeurs de Français en Angleterre.

DE L'ENSEIGNEMENT DU FRANÇAIS.

Par M. Ch. J. Ader.

Samedi 23 mars, M. Ch. J. Ader traitait la thèse suivante: "De l'Enseignement du français — rapports, similitudes et divergences que peuvent présenter les lois phonétiques et les lois musicales étudiées et considérées au point de vue de cet enseignement envisagé tant à sa base qu'à ses degrés intermédiaires, et à son sommet ou à son couronnement."

M. B. Minssen était au fauteuil.

Résumons à grands traits les points principaux touchés par la thèse spécialement originale et neuve de l'érudit conférencier.

Après avoir fixé les points si souvent controversés relatifs à cette question que l'étranger souvent se pose: "Où trouver le parler le plus correct et la prononciation la plus pure parmi tant de dialectes divers dans nos provinces de France plus ou moins affectées ou imprégnées de ces *accents* locaux?" M. Ader en vient à fixer les principes suivants accompagnés des preuves et des arguments les plus décisifs et les plus indiscutables.

— Pourquoi, dans l'enseignement des langues vivantes, et dans l'enseignement du français en particulier, n'exigerait-on pas que celui qui le donne, que le professeur possède les connaissances requises à la *culture physiologique de l'organe vocal?*

Voici bientôt un siècle qu'en France nos élèves sculpteurs et peintres reçoivent à l'Ecole des Beaux-Arts un enseignement anatomique et physiologique conforme au but des travaux qu'ils poursuivent, et en analogie directe avec l'étude analytique de la perfection des formes qu'il leur faut représenter—des gestes, des mouvements et des attitudes qu'ils ont ou auront à reproduire, qu'ils doivent à tout instant interpréter et rendre aussi vivants que possible.

Pourquoi nos professeurs actuels et futurs ignoreraient-ils cet enseignement scientifique dans sa théorie et dans sa pratique? N'ont-ils pas à rendre, à reproduire et à représenter ce qu'il y a de plus vivant en nous, ces signes, ces formes, ces sons, ces mots qui transfigurent et transforment une lettre muette en une reproduction réelle, en une frappante et vivante image de la pensée endormie au fond d'un livre? Leur rôle, leur tâche est autrement importante et belle puisqu'elle s'anime et se distingue de tout ce que la vie a de plus que le sommeil, de toute la différence et de l'abîme qu'il y a entre la vie et la mort.

Au Conservatoire National de Musique et de Déclamation on ébauche à peine cet enseignement. Nous voulons dire par là

que jusqu'aux très récents travaux de Pierre Bonnier, l'éminent laryngologiste de la clinique de l'Hôtel-Dieu, ces principes, timidement énoncés ou du moins incomplètement développés, ne furent jamais placés sur un terrain pratique, fixés définitivement et établis sur des bases scientifiques, sur des assises systématiques tout aussi simples que sûres.

L'organisme lui-même étant l'élément premier et pour ainsi dire la matière vivante sur laquelle le professeur de français doit opérer, qu'il doit manipuler et en quelque sorte pétrir, ne faut-il pas que ces organes auditifs, phonateurs et respiratoires soient analysés, étudiés, cultivés, *exploités* d'après un système et un plan bien arrêtés, en concordance avec les données scientifiques les plus rigoureusement exactes, dans leurs rôles comme dans leurs *aptitudes physiologiques ?*

Nous n'oublierons jamais, continue le conférencier, la triste déception que nous éprouvâmes le jour où, à la suite de malmenages incessants, de déplacements vocaux, de projections sonores mal dirigées ou trop longtemps soutenues, ou encore forcées, notre voix fut littéralement cassée et irrévocablement perdue par un organiste de grand orgue, qui pourtant passait pour un maître, mais qui tuait les voix en congestionnant ou en tuméfiant les cordes vocales de ses élèves.

Le mode respiratoire que le chanteur recherche, qu'il étudie et tâche de s'approprier, celui qui professe une langue, celui qui enseigne à bien dire, à s'exprimer selon les règles d'une élocution pure, claire et nettement vibrante, l'éducateur—quel que soit le degré dans l'échelle de l'enseignement social auquel il appartienne—le maître, en un mot, dont le rôle est d'apprendre à parler, à causer ou à développer tout bonnement les pensées de chaque jour, ne doit-il pas le connaître et le posséder à fond ?

Nous ne craignons pas d'affirmer qu'il lui incombe—à lui tout autant et plus qu'au chanteur, qu'au déclamateur public, qu'à l'acteur—de le connaître, ce mode de la respiration, ce mécanisme merveilleux du souffle et de l'émission des sonorités buccales si infiniment diverses et si admirablement variées !

Non, il n'est pas permis au professeur d'une langue vivante, au professeur de français, d'ignorer un seul secret de cette *technique* importante. L'homme a d'abord à parler ; il exprime ensuite ses pensées par le chant.

D'ailleurs la question se pose et s'impose ici sans conteste. Pourquoi cet enseignement ne marcherait-il pas de pair avec tous les autres ? Pourquoi ne s'harmoniserait-il pas avec les découvertes scientifiques modernes, avec les progrès réalisés dans le domaine des sciences positives, et n'emboîterait-il pas le pas avec tous ses congénères ?

Nous ne prétendons nullement faire du dilettantisme dans une thèse aussi sérieuse et aussi vitale pour l'avancement des études de linguistique ; nous entendons tout simplement et avant tout demeurer pratiques.

Donc il faut que maîtres et élèves apprennent à connaître, en s'appuyant uniquement sur les données de la science et de l'expérience comme aussi de l'observation naturelle, quelle est *la place de la voix* ; comment se prend la respiration pour telles ou telles voyelles ; comment elle s'accentue, s'accélère ou s'efface ; de quelle manière et dans quels degrés le souffle s'appuie, s'amplifie, se renforce, diminue ou meurt avec et sous telles autres sonorités qui représentent les lettres, les signes alphabétiques d'un idiome, d'une langue.

Il faudra comparer ces attitudes, ces formes avec les attitudes et les formes de la langue maternelle.

Les défauts de prononciation proviennent des infirmités de la voix et de ses maladies, dues presque toujours à ces défectuosités dans la tenue vocale, à ces écarts de sonorités, à ces prolongements de respiration et de vocalisation, à la fatigue excessive des organes, au surmenage de leur fonctionnement normal et à leur malmenage.

Il faut y remédier au plus tôt. C'est le devoir du professeur de le faire. Pour cela il faut qu'il sache. Mais c'est là, notons-le bien, la tâche primordiale du professeur de français dans l'enseignement moderne.

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CURRENT EVENTS.

Fixtures.

At the meeting of members of the College of Preceptors on May 8 Mr. P. J. Hartog will read a paper on "English in English Schools."

* * *

Dr. Aikin will deliver four lectures on "The Use of the Voice" at the College of Preceptors on May 3, 10, 17, and 24.

* * *

M. Louis Latour will address the Société Nationale des Professeurs de Français en Angleterre on "Alceste et Philinte" at the College of Preceptors on Saturday, May 25, at 4 p.m.

* * *

Under the Martin White Benefaction, Baron Kikuchi, sometime Japanese Minister of Education and President of the University of Tokio, will deliver the following courses of lectures during the summer term:—(1) A course of four lectures on "Japanese Educational Administration," at the London School of Economics, Clare Market, on Thursdays, May 2, 9, 16, and 23, at 8.30 p.m. (2) A course of ten lectures on "Japanese Education," at King's College, Strand, on Fridays, April 26, May 3, 10, 17, 24, June 7, 14, 21, and 28, and July 5, at 8 p.m. The course will be repeated at University College, Gower Street, on Saturdays, April 27, May 4, 11, 18, and 25, June 8, 15, 22, and 29, and July 6, at 11.30 a.m. The lectures are free.

* * *

A service for members of the University of London will be held in Westminster Abbey on May 8 (Presentation Day) at 6 p.m. The Dean will preach the sermon. Tickets from Mr. L. S. Kempthorne, University College. Applicants should send stamped addressed envelope, and state whether they are graduates or undergraduates, and whether, if graduates, they will wear academic dress.

* * *

The London Field Club, under the conduct of Prof. H. G. Seeley, of King's College, London, will make excursions during the month to Oxted (Chalk escarpment, May 4), Rickmansworth (Gravels, May 11), Aylesbury (Kimmeridge Clay, May 18), and Redhill (Lower Greensand, May 25).

* * *

The Royal Sanitary Institute will hold examinations in Hygiene in its bearing on Social Life, in Edinburgh on May 3 and 4, and in London on May 24 and 25. Application forms from the Offices of the Institute, Margaret Street, W.

Honours.

The University of Oxford has conferred the honorary degree of M.A. upon Mr. A. R. Pickles, B.A., Head Master of Burnley Wood Council School, Burnley, President of the N.U.T; Mr. James H. Yoxall, M.P., General Secretary and ex-President of the N.U.T.; and Dr. T. J. Macnamara, LL.D., M.P., Parliamentary Secretary to the Local Government Board.

* * *

On the occasion of the opening of the new extension buildings (April 23), the University of Glasgow conferred the honorary degree of LL.D. upon the Prince and Princess of Wales.

The University of Edinburgh has conferred the honorary degree of LL D. upon three of the Colonial Premiers: Sir Joseph G. Ward, Dr. L. S. Jameson, and Mr. F. R. Moor. The degree will, it is hoped, be conferred also upon Mr. Deakin and General Botha later in the year. Sir Wilfrid Laurier and Sir Robert Bond received it in 1902.

* * *

The University of Dublin has conferred the honorary degree of Litt.D. upon Prof. W. M. Lindsay, St. Andrews University.

* * *

On the occasion of the dedication of the Carnegie Institute, Pittsburg, the Western University of Pennsylvania has conferred the following (among other) honorary degrees:—

LL.D.: Sir Robert Ball, Sir Robert Cranston, Sir William Turner, Sir William Preece, Signor Marconi, Dr. Chalmers Mitchell, Dr. John Rhys, Rev. E. S. Roberts (Master of Caius College, Cambridge), and Mr. Edwin Abbey.

D.Litt.: Mr. Moberly Bell, Mr. Hammond Hall, Mr. Clement Shorter, and Mr. W. T. Stead.

Mus.Doc.: Sir Edward Elgar.

* * *

Mr. Ernest Gray, M.A., L.C.C., has had conferred upon him by the French Government the title "Officier de l'Instruction Publique."

Endowments and Benefactions.

The Broad Street Ward School (founded 1713) has been amalgamated with the Sir John Cass Foundation, Aldgate; and, under a scheme approved by the Board of Education, there will be four scholarships of £20 a year for boys and girls at the City of London Schools, two university scholarships of £60 a year, and one of £120 a year.

* * *

The Newport Education Committee has agreed to make an annual grant of £200 to University College, Cardiff, under certain conditions.

* * *

Mr. Carnegie has given £1,200,000 as an additional endowment and building fund to his Institute at Pittsburg. The total sum given by him for the various departments of the Institute is said to amount to some £5,000,000, while his total contributions to Pittsburg and Allegheny exceed £6,400,000.

Scholarships and Prizes.

Lady Margaret Hall, Oxford, offers, for March, 1908, three scholarships—£50, £40, and £30 a year for three years.

* * *

St. Hugh's Hall, Oxford, offers, for March, 1908, two scholarships—£40 and £25 a year for three years.

* * *

An open scholarship, £15 for one year, is offered by Bedford College for Women for the course of secondary training beginning in October. Candidates must hold a degree or equivalent in Arts or in Science. Apply for forms, &c., to the Head of the Training Department by July 1.

One scholarship in Arts, £31. 10s. first year, £28. 7s. second and third years; and two scholarships in Science, each £48 a year for 3 years, will be awarded on examination in June. Particulars from the Principal.

* * *

Free admission for a term, or for a session, to the Royal College of Science is offered to a limited number of teachers and of students in science classes (male or female) intending to become science teachers. Age 18 to 35, unless in exceptional cases. Applicants for studentships-in-training may obtain forms from the Secretary, Board of Education, South Kensington, S.W.—to be returned by June 15 or June 20.

* * *

At the Maria Grey Training College for Women Teachers 10 free places are offered to duly qualified students residing in the Administrative County of Middlesex. Apply to the Principal.

Appointments and Vacancies.

The Rev. A. R. Gordon, M.A., United Free Church, Monikie, has been appointed Professor of Biblical Literature and Exegesis in the Presbyterian College, Montreal.

* * *

At Liverpool University, Mr. John Edmond Salvin-Moore, Director of the Cancer Research Laboratories, has been appointed to the new Chair of Experimental and Pathological Cytology; Mr. G. D. Hope, B.Sc., Ph.D., Assistant Lecturer in Organic Chemistry; and Mr. J. K. Catterson-Smith Assistant Lecturer and Demonstrator in Electro-Technics. Miss Lightfoot has resigned her post of Assistant Lecturer in Education.

* * *

The Professorship of New Testament Language and Literature in the United Free Church College, Aberdeen, is vacant through the resignation of the Rev. Robert Johnstone, D.D.

* * *

Dr. W. Peddie, Lecturer in Natural Philosophy in the University of Edinburgh, has been appointed to the Harris Chair of Physics in University College, Dundee, in succession to Prof. Knenen.

* * *

Prof. Thomas Lewis, M.A. Lond., B.D. St. Andr., Professor of Hebrew, has been appointed Principal of the Congregational Memorial College, Brecon; and Prof. Thomas Rees, M.A. Lond., Professor of Theology, has been appointed Vice-Principal.

* * *

The Professorship of Law in Victoria College, Wellington, N.Z., will be vacant presently, Prof. Salmond having been appointed official Parliamentary Draftsman.

* * *

A Lectureship on Education (£400 a year) is open at Glasgow University. Applications to the Secretary to the University Court by May 16.

* * *

Mr. D. Low, M.A. St. Andr., has been appointed Lektor in English in the University of Belgrade.

* * *

Mr. J. Malloch, M.A. Edin., has been appointed Director of Studies to the St. Andrews Provincial Committee for the Training of Teachers.

* * *

Canon Jelf, of Rochester, has been appointed Master of Charterhouse in succession to the late Dr. Haig Brown.

* * *

Miss Constance Ashford, formerly Scholar of Newnham College, Cambridge, has been appointed Lady Resident at the National Society's Hostel for Church Women Students at Grove Park in connexion with the Day Training Department, Goldsmiths' College, New Cross.

* * *

Miss Mary Bentinck Smith, M.A. Dub., Principal of the Avery Hill Training College for Elementary Teachers under the L.C.C., has been appointed Head Mistress of St. Leonard's School, St. Andrews.

Miss G. L. Fanner has been appointed Head Mistress of the L.C.C. Secondary School for Girls, Wandsworth.

* * *

Mr. R. P. A. Mumford, M.A. Oxon., has been appointed Head Master of the County High School, Maldon.

* * *

The Head Mastership of Uppingham School will be vacant at Christmas.

* * *

The Head Mastership of Skipton Grammar School will be vacant in September.

* * *

The Head Mastership of Wimborne Grammar School is vacant.

* * *

Mr. A. Kahn has been appointed Head Master of the L.C.C. Camden Secondary School for Boys.

* * *

Mr. B. A. Bowers, M.A. Oxon., has been appointed an assistant master at Cheltenham College.

* * *

Mr. F. S. Scruby, M.A. Cantab., has been appointed assistant master in natural science at Aldenham School.

* * *

The Rev. H. H. Scullard, M.A. Cantab., D.D. Lond., has been appointed Professor of Church History, History of Religions, and Christian Ethics at New and Hackney Theological Colleges.

Literary Items. The Walter Scott Publishing Company are issuing a handsome edition of Mr. Archer's translation of Ibsen's works at a popular price. They announce "The Story of Minstrelsy," by Edmondstoune Duncan, as the next (ninth) volume in the excellent "Music Story Series" projected and edited by Mr. Crowest.

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Messrs. Newnes announce a new boys' paper—*Boys' Life* (1d. weekly)—under the conduct of "Old Fag," the founder and editor of the *Captain*. It will eschew "blood-and-thunder" affairs, and "appeal to every side of the life of the boy of to-day, whether in the home, the school, the playing field, the workshop, or the office."

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The Board of Agriculture and Fisheries is distributing gratis and post free a new edition of the leaflet on the black currant mite. Apply (unstamped) to the Secretary, 4 Whitehall Place, S.W.

General. In the "First Corridor" of the Manchester Grammar School the late Dean Maclure—a scholar 1844–51, Chairman of the School Committee 1896–1905, and Chairman of the Governors 1906—has been commemorated by a tablet presented by the governors and a replica portrait engraving subscribed by present and past boys.

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McGill University is unfortunate. Last month, first the Engineering building, and then the Medical buildings, were burned down. The loss is estimated at several hundred thousand pounds.

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The Presidents of the University of Toronto and the Guelph College of Agriculture have offered to arrange the placing of boys introduced by any English public school with farmers selected by the Ontario agents for colonization and agriculture, so as to enable them to undergo the preliminary year of practical training required before entering Guelph College.

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It is understood that terms have practically been arranged for the transfer of Liverpool College to the City Corporation.

THE GROWTH OF MORAL IDEAS IN CHILDREN.

With special reference to the Programme of

THE MORAL INSTRUCTION LEAGUE.

Address by Professor Findlay.

At the Evening Meeting of the members of the College of Preceptors on April 17, James Wilson, Esq., M.A., in the Chair, the following paper was read by Professor J. J. Findlay:—

In asking you to consider the relation of morals to the life of the child I am, as you are well aware, embarking on one of the most controversial problems in education. It is controversial because it is so important, so universal in its relations, so closely bound up with the permanent and the deepest interests of mankind.

Morals a Universal Interest.

From one point of view it affects the interests and aims of the Churches and the clergy: they are, and always have been, to the great mass of the human race, the repositories of teaching in matters of virtue and character; and, amid all the fluctuations of religious belief and practice, we must still recognize that religious experience and ethical experience lie closely associated in the lives of nine men out of ten. This being so, it is impossible for a practical inquiry into morality in schools to be handled without *implicitly* touching the interests of what is called "religious education." Whatever distinction we may make, in logic and reason, between the two realms of what is called "secular" and what is called "religious," we cannot, when faced with the practical problems of the day's controversy, ignore the connexion. I do not propose, however, to emphasize this connexion to-night. I hope to approach our inquiry from one particular standpoint, and I shall leave alone the inferences that my exposition may suggest with regard to religion in the school. For many reasons it would be undesirable in this meeting to intrude any direct discussion of that kind, especially at a time when the storms of political and religious antagonism rage with such fury. At the same time, let us not hide our heads, like the ostrich in the sand, and suppose that we have solved a problem simply because we rule it out of discussion.

But our inquiry not only affects the Churches, laymen or clergymen; morals are a universal interest, and are with us all the while. The home, the office, the factory, the play-field—everywhere where men and women congregate—is a stage for the action of moral forces, and you cannot touch the fringe of the problem without touching some important interest in which a large number of your fellow-creatures will have something to say. When you get behind the surface of society you find that moral issues underlie all other social and political issues. If men are virtuous, all goes well; if they are vicious, we all agree that there is no remedy, either for the individual or for the State.

A Moral Idea must infuse every School.

Now, it is for reasons such as this that we teachers find an interest in ethical problems. When we first enter the teaching profession, I imagine that, as a rule, we are not specially attracted to the subject; we like children or we like study, and we take up the pursuits of the teacher with a vague impression that the life offers a useful and honourable career, without having any more definite sense of obligation for the deeper moral issues involved in our calling. But when the teacher comes face to face with young life in daily intercourse, when he has watched the progress of his scholars from week to week—still more when he has witnessed them pass beyond the school walls—I fancy that, as a rule, he begins to have anxieties: to feel doubt as to the end to which his work is leading. And if he himself, as most teachers are, is of a thoughtful and serious bent of mind, he will become aware, as he advances in years, of the intimate relation

between school life and those wide realms of social, economic, political aspects of human experience to which home and school are but the portal.

Now this process which I describe as proceeding in the development of many individual teachers is paralleled in the present decade by what we witness both among teachers and among the more thoughtful of the public. The nation is coming to be seriously concerned about children's morals. First of all, we have witnessed the rapid success in the propaganda of the Moral Instruction League, to which I shall refer later. Then we had, in 1904, that fine confession of faith called the "Preface to the Code." I believe that, in days to come, the issue of that document will be recognized as one of the chief services rendered to English education by its Central Authority during recent years; and now we have the initiation of an important Inquiry, of which the chief burden is being undertaken by my distinguished colleague, Professor Sadler.

All these are indications that the general public, as well as the teachers, recognize, with clearer insight than formerly, that a moral ideal must infuse every place of education. The "reformers" have long recognized this. What Socrates and Plato told the Greeks has been reasserted on behalf of schools by Pestalozzi and Herbart, by Arnold of Rugby, and by a host of smaller men than these in modern days. Our controversies, then, are not as to the aim, but as to method. We are all agreed that our children must become good—that is, indeed, the one final purpose of schooling; but we are not agreed as to means by which the school can aid this purpose. I offer to you an analysis of my own experience as a practitioner, as a craftsman; as my contribution in the way of evidence for the inquiry on which the Moral Training Committee has embarked.

The Standpoint.

2. The title of this paper suggests the standpoint from which we may think the matter out. We should watch the developing life of our scholar from infancy to manhood, and learn from that the mode in which he is to be handled. We have our enlarged adult experience of a moral universe; how does the growing organism react towards this experience? By what stages does the child cease to be a child, putting away childish things? No one can dispute the necessity for looking at the problem in this aspect; and yet how reluctant we are to accept the full obligation which it implies! We are always inclined to give the first place to the thought, the experiences of the adult, of ourselves, the cultivated reasoning, the formulated system of things that prevail among grown men and women, and to depreciate, or even to ignore, that immense gulf that lies between five and fifteen, and again between fifteen and twenty-five years of age. This is, then, the chief question to which I shall seek an answer this evening; but all the while another question will go along with it, and must get some sort of an answer, although a complete answer would take us to the heights of speculative philosophy. What do we mean by morals? What is the nature of this moral universe into which the child is to grow? We shall not separate these two questions; but our answer to the one will bear upon the other right through our exposition.

The Moral World of the Child.

3. The study of children's life and experience reveals a world of impulse, desire, thought, language from which the world of morals, *as we know morals*, is wholly absent. Right and wrong begin, for every human being, in a multitude of reactions between inner disposition and outer experience: mother and father, food, toys, pain, sleep—these give the impressions on which a standard of conduct in the slow procession of the years is established. As regards infants, men of science have now confirmed the homely judgments of parents; and Professor Sully has done a capital service by putting together in scientific form the fruits of his observations in this field. The little ones are not moral or immoral, but display a "disorderly jumble of impulses, each pushing itself upwards in lively contest with the others, some towards what is bad, some towards what is good."

I say that, as regards infants up to six years of age, the situation is fairly well recognized. A well bred child has already learned much that serves as foundation for a virtuous life in self-control, in good taste, in sympathy; but his learning is by suggestion and environment, not by reflection. What, then, of the years after six? It seems to be assumed by many that young boys and girls from seven to thirteen arrive with great rapidity at control of moral judgments pretty nearly on a level with ours. Thus Mr. F. J. Gould tells the children of ten: "When we have this temper which knows where to stop, we are said to be Temperate; we practise Temperance; we lead a Temperate Life." * True, he regards these general statements as subordinate to "the dramatic interest of the stories"; but I can see nothing in the mind of boys and girls to warrant me in believing that that can separate the abstract notion of a virtue or a vice from their own personal experience. What they can do after six years of age, especially after eight or nine, when they have got used to reading print, is to repeat and memorize adult language with fidelity, and to give to this a vague meaning of their own, which suffices for the artificial purposes superinduced by the teacher.

But their own moral life ranges in another sphere. Even in the years of adolescence they are still, as Arnold of Rugby called them, barbarians; and Stanley Hall, followed by a host of other investigators, has shown us how great is the gulf between the social standards of boys and girls compared with the same beings six years later. And yet the student of children is puzzled; for these children *can* be talked to about right and wrong—about truth, charity, justice, prudence, courage; they certainly think and feel and make comparisons both about the behaviour of themselves and their fellows and about the behaviour of characters in story. Where, then, lies the difference between us and them? The difference lies in the interpretation we and they put upon these language symbols. Our powers of abstraction, of generalization, are so immeasurably greater than theirs, simply because the interval between child and adult has enabled the latter to acquire a store of experiences which interpret these terms in the wide adult sense.

We are only yet on the threshold of scientific inquiry as to these phases of human development, but in regard to morals we may notice two parallel lines of growth: (1) an intimate, personal experience of behaviour—the warp of my own actions crossed every moment by the weft of others' behaviour around me, and thus creating day by day a new moral self; (2) a growth in powers of abstraction, and in the use of the symbols of language by which abstract ideas are imaged, sorted, and raised to higher quality. The second of these is only valid, whether for the practical needs of life or as a step in development so far as it springs from and returns to the first. And, although individuals differ greatly in precocity as regards development of reflective attention, growth, even in the most precocious, is always slow, and cannot safely be hastened.

We are beginning to see that in the realm of abstract ideas there is an order of growth: some fields of activity lend themselves to abstract thinking earlier than others. It seems likely that number supplies the first field in which a child is capable of pure conceptual thinking; and when he once begins *con amore* to think in mathematics he may proceed with astonishing rapidity. Grammar comes later, but the same rapidity is witnessed in favourable cases. Now, I venture to assert that ethics, in the widest sense of the word, comes last: that the proper place for formal reflection upon conduct is after sixteen. I have no time in this paper to adduce the full grounds for such a conclusion from among all the literature to which I could refer: I can only select one paper for special mention—an article by the late Prof. Palmer, of Harvard, published in the *Forum* for January, 1893. It offers a most impressive plea for the introduction of ethical instruction into all colleges and universities, and for the rigid exclusion of such teaching at any earlier age.

I shall surely not be misunderstood. I am not urging the exclusion of humanistic teaching, of story or literature nor the exclusion, in its proper place, of personal influence; but I will not lead children to answer questions on conduct before the questions arise; I will not look for the fruits of reason before experience has grown from bud to flower.

> Oh, if we draw a circle premature,
> Heedless of far gain,
> Greedy for quick returns of profit: sure,
> Bad is our bargain!

One further note on the growth of children before adolescence. Abstract thinking upon any field grows out of concrete experience: thus handling, seeing, touching of things precedes quantitative estimates of them. Now, in morals, where the teacher's aim is the creation of an abstract ideal, the scholar's power in idealism depends upon a rich experience not only of good lives existing about him day by day, but upon food for imagination supplied by story. No one disputes this: the entire

* "Children's Book of Moral Lessons," page 11.

world, from the dawn of history, has been fed upon good classic story, and for the great bulk of mankind moral ideas are largely identified with the characters of classic story. Thus, to most Christians morality is "to be like Christ": the separation between the abstract ideal and its personification is not made. It needs an adult mind—yes, and an educated adult mind—to think the two apart. Children think of conduct in terms of personality: whatever comfort the New Theology may give to us fathers, our children are barbarians, mediævalists—as you please—unable to appreciate ideals apart from strong personal attachment to higher powers. They may grow out of this stage, upwards or downwards: but there they stand, and so they must be handled.

Premature Introduction of Morals.

4. Let us note some of the perils we incur by venturing to be precocious in morals.

(*a*) By putting morals into a compartment, taught once or twice a week, we are repeating the error of the Churches: we shall select specialist teachers for morals, and the teacher of arithmetic and geography will stand on a lower plane. We shall separate morals from the real events of life: it will become one more subject, to be talked about in certain class lessons, and relegated to that conventional region of experience. How fatal to a man's growth in behaviour when he becomes habituated to reflection upon other people's acts without the instant stroke of conviction: "Thou art the man!"

(*b*) This specialization in morals readily lends itself to risks as regards the moral standard. Thus, I gather that those who have constructed the syllabus of the Moral Instruction League are not consciously out of sympathy with Christian ethics; but no one can study the topics there presented without feeling that there are grave omissions. And when public authorities set to work to draft moral codes one may be reasonably afraid lest the school should become an engine of party. No one denies that this is the case in Germany and in some American States, and it is significant that the Birrell Code of last year, which introduced moral instruction, lays stress on "love of one's country," but makes no reference to the Fifth Commandment. It is natural enough that teachers and inspectors should lay stress on the special virtues that "good" children display at school, but it is not so certain that this distinctive type of moral being is the ideal for the larger world outside.

(*c*) Specialization is harmful; but precocity is disastrous. If I am right in urging that abstract thinking and discussion, in any field of experience, must be preceded by an abundance of subconscious, multifarious, practice in that field, then, in morals above all, we must hold our hand. For behaviour is intimate, hidden within the depths of our personality. If you do succeed in touching the child's personal life, you touch him to the quick. How children instinctively distrust, and even hate, the meddlesome, moral fingering of adults anxious to manage, to control, to play the part of deity to their inferiors! I say quite solemnly to such meddlers: "Take off thy shoes from off thy feet: the place whereon thou standest is holy." Let virtue grow in its own time; leave these quiet waters to their own channel; let reverence and hope have a chance; leave some part of revelation, of insight, to come after you have ceased to expound. If children are to honour either man or God, then both man and God shall wait their time. If parent or teacher, zealous of good works, forces the pace, one of two things must happen—either the child becomes morbid, and "no part of us is more susceptible of morbidity than the moral sense"; or he becomes case-hardened, and the young man enters on life already *blasé* and indifferent. Mr. Birrell, last year, introduced moral instruction into the Code and exhorted the teachers that "natural moral responsiveness is to be stirred." Now, I distrust this language; I distrust the hands that want to stir my child's inner nature. Experience, all about him, is stirring him every day, and he will respond in his own way if you will forget that you are a moralist and remember that he is a child. Restraint, silence, modesty, example are the better watchwords. Virtue is not learnt by argument until you have come of age to argue, and even then for one Socrates there are a hundred Sophists. Rudyard Kipling has written many strange stories and taught us varied lessons: the "Flag of their Country" in "Stalky & Co.," at any rate, strikes the right note; and in another field of literature E. E. Bowen has immortalized the evil type of teacher in "Arnoldides Chiffers."

(*d*) Let me emphasize from another point of view the risk of moral decadence when you divorce practice from precept. The psychologists are telling us more and more that behaviour is an affair of habit, and Isaiah said the same: "Wash you, make you clean!" Don't talk about it. Children will not anticipate future disaster, but they can exercise the will within an immediate range of cause and effect. They will save pennies if you tell them to do so, and will be proud of it, whether or no you call the act by the name of Thrift; but moral stories to exalt their obedience into a great virtue will not amuse them, but may make them conceited. You may do worse than that: you may crowd the bairns into unhealthy class-rooms, depriving them of fresh air and free play, while you teach them the laws of hygiene and pretty behaviour. They will forget your lessons, but may remember more than you meant them to do. If a public authority should crowd its labouring class into slums, but prescribe lessons to their children on the science of dirt, what wonder if these children recall in later life some words about those "who devour widows' houses, and for a pretence make long prayers"?

The public anxiety about morals in the school is certainly justified: in the truest sense the school stands for morals and for nothing else; but morals is to be *lived* there—"the kingdom of God is within you." There is no dispute among children as to conscience and the moral standard: the trouble, with teachers and children alike, is not to talk about the good life, but to live it—to keep living it until the right paths become so well worn as to be habitual.

(*e*) We begin to tread on dangerous ground when we refer to teachers' morals: for we are a sensitive profession, and quick to resent criticism. I suppose we may fairly congratulate ourselves that, as a profession, we well represent the standard of our day: we do not, as a rule, become teachers from low motives, and our life among children should help to keep us on a high plane. But we need to maintain our personal ideals steadily before us; and the moral life and influence of a school community is largely a reflex of the life of its teaching staff. Our children soon find us out. A girl, the other day, told me quite naïvely that she was going to take part in an entertainment at her school because it was "a good advertisement," and the teachers hoped to get more pupils if the performance went off well. When we strive for scholarships and attendance prizes, and all the other marks of external success that are pressed upon us by governors and committees, we wipe out the effect of many moral lessons. If the authorities, instead of planning moral lessons for us, would study how to make it easy for the teacher to pursue a high ideal, our schools would breathe a finer atmosphere. Where are the schools where morals are truly taught? They are not discovered, I fear, by H.M. Inspectors or displayed in reports to the press. But their teachers "have their reward." Such schools and such teachers will instinctively shrink from a parade of moral lessons: they will feel that such external aids are a false light, drawing away the attention of the public, as well as of their scholars, from the realities of moral experience.

It will be seen that much of this argument against the premature introduction of morals is in line with criticism we are accustomed to make about other branches of the school curriculum. We are often told, with pride, that the nineteenth century was the children's century: it gave freedom and leisure and study to children in all ranks of society; it discovered, to an extent undreamt of in earlier epochs, how much the school can do to prepare the child to carry the burden of the coming years. All this is true, and we may rejoice at it; but surely we are beginning to recognize that this picture has its blemishes. The popular mind has come to believe that the school can work wonders. It would appear as if every topic that attracts the adult mind can be transmitted through the school to the lives of children. Every "reformer" in the world of science or society or trade or manufacture or religion during the last century sought to find the counterpart for his enthusiasms in the school curriculum; and this agitation for moral instruction is merely the last of a long series of efforts to "capture" the school for interests that the current generation of adults discover to be of special import.

Criticism of the Moral Instruction League.

5. After what I have now put forward, it will be clear that, while I heartily sympathize with the ideals of the Moral Instruction League's propaganda, I am in thorough opposition to its methods, and regard with great anxiety the success with which this propaganda has been pushed to the front by some Education Authorities. I oppose these plans not because I am indifferent to morals, but rather because I desire to see the entire life of

the school controlled by ethical purpose and serving the ends of the social ideal.

I cannot, in the short space now left, attempt to offer even an outline of principles on which I think this purpose should be, and is being, achieved. Indeed, to do so would be to offer a complete text-book of education. But I think I can show quite definitely wherein I can agree and wherein I disagree with the plan of the Moral Instruction League. Let us note first of all the fundamental distinction which most text-books of education now make between training and teaching. Under the head of Training we include the corporate life of the school society, the personal influence of the teacher, the system of school management—all those factors, in short, which influence the scholar *apart* from lessons. Now as to all these matters the League has little to say: I do not think its agents desire to depreciate these elements in the growth of the young; but, whatever may be the views of this League, all the best teachers in England have counselled us to attach supreme importance to training, and I for one, looking back up more than twenty years of close association with the inner life of schools, testify now, as I have done before in this room, that character is formed, in the vast majority of cases, by training—*i.e.*, by the suggestive influence of the school society rather than by the formal processes of teaching.

But we must leave all that on one side. Teaching, although it holds the second place, can certainly be made a great factor in the formation of character. We who study education, who have sat at the feet of Pestalozzi, Herbart, Froebel, Arnold, Dewey—what else are we doing than endeavouring by study and research to find out how to help children to be virtuous by means of the pursuits of school? If, instead of speaking of moral instruction (*i.e.*, instruction in morals), our friends would preach instruction for morals, then we should have no difference with them. Every lesson is and must be a step in moral experience, and helps the scholar either to be better or worse. For your scholar is behaving all the while. You may take the list of virtues found in the League's programme, and I venture to assert that room for the practice of these will be found in the course of every week during school lessons. Our difficulty as teachers is not in seeking topics for discussion which raise formal morals above the threshold of consciousness, but in discovering, at each stage of a child's development, such a round of school occupations and studies as shall serve to advance him step by step to the realm of moral experience in which we adults move. That is the pearl of great price, the hidden treasure, for which all true students of education are in search: and the easy method of the League does not take us far.

Detailed Objections to the League's Methods.

6. For this method, when reduced to simple terms, amounts just to this:—

(1) It recognizes that children enjoy story-telling, and it advises us to select stories which are worthy of being told—worthy because they help the child to understand, so far as a child can understand, the meaning of human life and its relationships. But here there is nothing new: story, in fact and fiction, has always been a great power in education—more so in the life of adults than in the life of children. Many schools have, however, neglected to give children a fair chance of reading and hearing good literature, and, so far as the League calls attention to this neglect, it does well; the National Home-Reading Union, however, and Mr. W. T. Stead, with his "Penny Books," have done far more in the last few years. But it is also needful to bear in mind that story-telling, whether of fact or fiction, is stimulant rather than solid food: the practical needs of experience are sterner monitors, both to ourselves and to our children, than romance or song.

(2) It criticizes the selection of story which has hitherto been offered to children, and provides new material, partly composed, partly selected, by specialists in moral instruction. Some of these stories are delightful: others are the reverse. Sometimes, in endeavouring to teach a moral, they teach untruth (see, *e.g.*, No. XIX. in Chesterton's "Garden of Childhood"). I am sure we must admit a debt of gratitude to these writers, so far as they possess literary gifts and contribute story for children which is really adapted to the environment and experience of the child of to-day. It must be admitted that, while the great classical stories of our childhood—the old ones of the Bible and of Homer, the modern ones of Defoe and Bunyan, of Grimm and Andersen—must always hold their place, there is room for a new literature of childhood centering round the streets and homes which lie about our little ones to-day. Miss Chesterton certainly has gifts of this kind, but I must not delay to attempt any criticism of her work: she is one among many writers, chiefly women, who during the last thirty years have enriched the children's library.

(3) It proposes to plan the telling of stories so as to make a direct appeal to reflection about the terms of moral conduct. Here we come at the root of the matter, and at the one point in which the League offers a new contribution to pedagogy. Much that I have said already will show why I cannot obey their *dictum*, and choose a child's story in this fashion. The method is, in my view, false to the truth of things, false to art. I quite admit that much good literature has been created in response to moral demands. I am no advocate of art for art's sake. Many writers, great and small, have spoken their message to the world by means of a story; but a literature planned to expound a series of moral categories cannot be true to experience, and, if we adults would resent the employment of such story upon ourselves, we ought to resent it on our children's behalf.

(4) Is there, then, no place for the moral story; no occasion when a teacher can tell such a story? Certainly there is: the example of all great teachers is before us to show us the right way. When the lawyer asked the Master: "Who is my neighbour?" he was told a story in reply. And the place for moral stories to children is analogous: they tend to edification only when they serve to answer a question raised by the child himself. But the method of the League would invert this order.

No one, Mr. Chairman, is more conscious than myself of the inadequate handling that I have presented on this important theme. I have tried to crowd into one paper matter which might profitably engage us for a whole series of meetings. I especially regret that I have been unable to say anything as to the treatment of history and literature so as to get out of them not merely their value as knowledge and as art, but also their value in the way that both Herbart and our own Thomas Arnold employed them—viz., as affording occasion for reflection upon conduct. As a disciple of these great teachers, I and many others have sought to train for character on methods more true, as we think, to experience that those which I have criticized. I might have adopted this evening a less polemic style and have expressed my views without directly opposing the policy of this organization. But I feel that this policy and propaganda are doing grave harm.

We are all sure that the intentions of this League are sincere, and their zeal is, indeed, commendable; but I believe that the effect of their propaganda upon public authorities will not advance, but will rather hinder, the development of the moral standard among teachers and children. Believing this, it would seem to be one's duty to say so openly and frankly. I understand that the League is adopting a new name, and will substitute the word "Education" in its official title in place of "Instruction." If this change of name implied a change in the pedagogic principles on which the League desires to influence the young, I should be heartily glad; but I assume that the League has no intention of withdrawing its graduated syllabus. It is the method of this syllabus and of the books based upon it that I regard as injurious to the progress of education. I referred at the outset to the Committee of Inquiry into Moral Training and Instruction; it would have been well for our schools if an impartial and scientific inquiry had been undertaken first before a propagandist effort had been made to reform our plans of school instruction.

Dr. F. H. Hayward thought that Prof. Findlay's paper was somewhat academic. The word "prematurity" was prominent in it, and teachers were warned against introducing moral problems to children before those problems fell within the children's own capacity and experience. Many moral problems were forced very early on children's notice. In a certain district in the East of London nearly every tenth house was a place for the dissemination of gambling "tips," and even the children's games were often gambling games. Similarly, children were often brought face to face with thriftlessness and intemperance. To try to clear up their moral errors on these subjects was therefore not "premature." The Moral Instruction League did not ignore "training" and unconscious moral education. The objects of the League were two: "to introduce systematic moral instruction *and* to make the formation of character the chief aim of school life." The syllabus drawn up by the League was only a step. The League admitted the importance of various indirect moral influences; indeed, such influences were perhaps the most important of all. But to admit this was not to deny the value of direct moral instruc-

tion. For years spasmodic attempts had been made to give moral instruction on kindness to animals, temperance, patriotism (the last through the influence of the Navy League), and other subjects, and no one had protested. But the moment the Moral Instruction League sought to systematize all these efforts protests were made not only by pronounced Philistines, but by eminent educationists. In his view, the lecturer had entirely failed to make out his case. It was the old "faculty" fallacy over again. Of course, if the intellect were entirely separate from the will, and there were no element of insight or enlightenment or knowledge in moral conduct, then moral instruction could not influence character. He (the speaker) would urge that much moral evil sprang from ignorance—from the mere fact that the impropriety of certain actions had never been expressly pointed out, and that much also arose from prejudice, much from delusion, and even from thoughtlessness. One root of the prejudice against direct moral instruction was the fear of "priggishness." Mr. A. C. Benson had said that the commandment "Don't be a prig" had become as authoritative as the commandments of the Decalogue. Another root of the prejudice was the confusion between instruction and training. At a meeting of teachers, when this question of moral instruction came up, one teacher called out: "We are giving it all day long." Of course, he meant: "We are giving moral *training* all day long." There was really no scientific argument against properly graded direct moral instruction. The lecturer seemed to forget that consciousness and reflection could work downwards into the organism. Children were not merely bundles of unconscious instincts. These moral lessons had recently been introduced into all kinds of schools with the happiest results, so far as could be judged.

Mr. Oliphant was afraid that some misconception might arise owing to the lecturer not having left a sufficiently definite place between moral training, on the one hand, and some form of dogmatic or systematic teaching, on the other. Between these two methods he believed there was an intermediate means of influence which was represented by the story lessons to which the lecturer had referred. He considered that the thoughts and feelings of a child were just as much part of his experience as the acts which he performed, and, although there might be no place in the school curriculum for what one might better call ethical than moral lessons, there was a very real place for the suggestion of moral ideals and principles by means of calling out the sympathies of the child. He thought that, owing to stress of time, the lecturer had not laid sufficient emphasis on the opportunities in this direction which were offered by personal examples in history and literature.

Mr. Orchard could not agree with the lecturer that formal reflection upon conduct should not take place until after sixteen years of age. He thought that a child of seven was capable of understanding the intellectual application of the great principles of righteousness, truth, and love, and was not too young to reflect upon his conduct. The basis of these great principles was to be found in the Ten Commandments. Morality must be taught both by precept and by example.

Mr. B. Dumville said that, while he prized the many valuable suggestions which had been made by the lecturer, he was nevertheless in favour of a definite scheme of moral instruction; and this, although he had during nearly two years been witness of the failure of such a system in France. If moral instruction had to be judged by its results in that country, it would, he feared, have to be condemned. But he was inclined to think that its failure in France was largely due to the separation of moral instruction from the ordinary school work. Thus, he had heard a teacher give a lesson on truthfulness in the morning, and in the afternoon exclaim: "There! he's lying again," passing on without further comment. The pupils were openly suspected of dishonesty. Terminal reports were usually sent to the parents by post, and one ingenious head master had stated that he was careful to arrange that they should arrive while the boys were at school. Moral instruction should be the centre or rallying point of all that moral education which should permeate every part of the school work. The teacher should constantly have before him the desire to turn to account all opportunities of driving home practically what had been said in the definite lessons on morals. The lecturer advised that no definite moral instruction should be given before the age of sixteen. This would mean none at all for 75 per cent. of our young people. In elementary schools the pupils left at thirteen, and even in secondary schools a large proportion disappeared by sixteen. The number of those who proceeded to a college course was very small in proportion to the whole population, and consisted, moreover, of those who were perhaps least in need of careful moral direction. The lecturer had also spoken of the dangers of omission in moral instruction, but some amount of omission was inevitable. It appeared to him (the speaker) that in moral instruction it was less dangerous than elsewhere. Plato had shown long ago that the virtues were not completely separable. His "wisdom, courage, temperance, and justice" when examined were found to imply one another to a large extent. Even if some points of view were not sufficiently emphasized, the danger would not be great, if the essentials were clearly appreciated. It had been said that children had no moral nature, and could not conceive "virtue" in the abstract. While recognizing the truth which this statement contained, he contended that it did not represent the whole truth. Although children started with no moral nature, they gradually acquired one, and it was impossible to fix a point when this process began. These abstract terms did not mean the same to children as to adults, but the little ones did give them something more than a mere concrete meaning. His own little girl of three could vaguely understand what it meant to be "a good girl." The meaning she attached to the expression was not so rich or comprehensive as that of her parents, but it was a growing one, and, even in its incomplete form, was of value. The lecturer had suggested that moral stories might be told when the occasion for them arose in practice as when a child itself asked for advice. This was good, and, no doubt, most teachers had always been ready to act in accordance with it. But, if all definite moral instruction was to wait for occasions of this kind, it would be most fragmentary and incomplete. Many children, especially retiring and morbid ones, never sought advice. Teachers could not, then, afford to leave this most important part of instruction to chance. Lastly, he would advert to a point with which the lecturer had not dealt. Teachers were agreed that their object was to form "good" men and women, but they were not clear as to the type they wished to produce. The man of action would praise Cecil Rhodes as a good type, on the whole: others would condemn him. Further, our moral preaching took little or no account of current practice. It was a dangerous thing to impress a high ideal on children without paying any regard to the world into which they would ultimately be thrown. This difficulty was either evaded or ignored by most writers on the subject. Thus Mrs. Bryant, in her "Educational Ends," stated, on the one hand, that the object of moral education should be to form a being for whom truth was the end of all thought, and good of all action. But in another place she said that our aim was conformity to the moral order we found around us. This, however, was a very different thing. If they taught the higher, and if they succeeded in impressing it, they would either make the children ultimately miserable or hypocritical. He was assuming that they would not be rich like Plato, and, like him, able to live in calm contemplation of the world around them; but that they would have to earn their living in daily contact with their fellows. And he affirmed that it was impossible to live with tolerable success in society as it is and yet maintain complete conformity with the higher ideals. This contradiction between the real and the ideal was something which teachers had to face. They ought not to plunge children into the very imperfect moral world which existed without some definite preparation for its contradictions.

Mrs. Phelps agreed that the teaching of morals should be commensurate with experience, and this was very different in different schools. It was becoming more and more the practice for parents to neglect the training of children at home and to leave the responsibility to school teachers. This was the reason for the existence of the Moral Instruction League. It was important not to attempt to teach children too much; in endeavouring to teach virtues there was a danger of suggesting the opposite vices.

Mr. Thornton said that children did not so much lack ideals as the power and wish to reach those ideals. One effective means of stimulating the exercise of virtue, which was abundantly practised in other countries, was almost entirely neglected in our own. He referred to the recitation and singing of ballads commemorating great and worthy deeds. English ballad literature was singularly meagre. He heartily agreed with the lecturer that our methods with children must be concrete and not abstract.

The Chairman said that it seemed to him almost a truism that any scientific study of ethics must be deferred until after school education. Physical education was a simple matter, and lessons to promote physical development could be given without any great difficulty in adapting them to the capacity of the child. So in intellectual education there were clearly marked stages which indicated the times at which particular studies might properly commence. But the study of ethics raised problems of the utmost difficulty. None of the five senses would enable a child to judge whether an action was right or wrong, and the lecturer was right when he said that formal ethical teaching must come later than physical and intellectual. Again, he agreed with the lecturer as to the danger in school education of a system which might involve the giving of formal moral lessons by a special teacher. It seemed to him that the teacher who could keep order in a form of 40 or 50 pupils, and could inspire the pupils to work and make sacrifices because they regarded him with great respect, was a moral teacher of a very high order. Moreover, a moral lesson was the dreariest lesson a teacher could give, unless it arose from some incident that had occurred, when, if well handled, the moral could be brought home to the pupils in a way to impress it on their minds.

Dr. Findlay having replied to the remarks of the various speakers, a vote of thanks to the lecturer concluded the proceedings.

TRAINING OF SCOTTISH TEACHERS.

PROFESSIONAL COURSES OF STUDY.

At a meeting of the representatives of the four Provincial Committees for Scotland, held in the University College, Dundee, on March 9, the following recommendations as to professional courses of study for teachers, and matters connected therewith, were unanimously adopted :—

(*a*) Professional Courses of Study.

I. Personal and School Hygiene.—That the course in this subject shall extend to not less than 70 hours and not more than 75 hours.

II. Psychology; III. Logic; and IV. Ethics.—That the course in these cognate subjects shall cover a period of instruction extending to not less than 150 hours, and that Experimental and Observational Psychology should form an integral part of the course.

V. Principles of Education (including History of Educational Theories and Systems).—That the course shall embrace instruction in the History and Theory of Education, and shall cover a period of instruction extending to not less than 100 hours.

VI. (*a*) Present-Day Educational Problems (including the consideration of the school systems of other countries).—That this course shall consist of informal lectures and seminar discussions embracing a period of not less than 20 hours.

VI. (*b*) [Alternative to VI. (*a*)] Infant-School Course.—That this course embrace a period of not less than 20 hours in infant-school methods, with special reference to kindergarten methods, the course to include practical work in such subjects as cardboard folding and clay modelling for infant-school mistresses.

VII. Methods of Teaching with correlated Practice in Teaching.—That this course shall extend to not less than 240 hours.

(*b*) Courses for the Extension of the General Knowledge of the Student.

I. No student, save on special cause shown, shall be allowed to take any university class for which there is no preliminary qualification (as, *e.g.*, history, education) unless, previous to his entrance as a student in full training, he has obtained the Higher-grade Leaving Certificate in at least three subjects.

II. Every student shall, as far as possible, follow up in the university classes the subjects in which he has gained Higher-grade Leaving Certificates.

III. No student shall be allowed to enter upon a three years' course with the view of ultimately securing a degree unless he has, before entering, the full qualification for every class which he proposes to include within his course of study.

IV. Every student shall be required during his course of full training to take at least one of the following subjects :—Drawing, music, physical instruction, woodwork, and needlework.

(*c*) Bursaries, Length of Service, and Fees for Non-University Classes.

I. That a graduated system of allowances be adopted by all the Provincial Committees; that the payments or advances be the same for every Committee, and have attached to them the same conditions of service; that the highest bursary allowance be £30, for both men and women, and that in every case where a bursary allowance is granted it shall carry with it the remission of the £10 fee for instruction in non-university courses but shall not include remission of fees for any university courses; that the scale of bursaries decrease from the maximum of £30 per annum by decrements of £2. 10s. to a minimum of £5; and that the longest term of service required of a teacher for cancelling the obligation incurred be five years.

II. That a definite sum be allocated annually to each Provincial Committee for bursaries, and that this sum be regulated by the average number of students in training under the Committee.

III. That it shall be in the power of each Committee to apportion the money in its control in such manner as may be thought most suitable to the requirements of the students, provided the scale and the conditions attached thereto agreed upon by consent of all the Committee be strictly observed.

IV. That the fee for the courses of instruction in non-university subjects shall be fixed at £10 per annum.

V. Students who receive remission of fees or remission of fees together with bursary allowances of any amount up to, but not exceeding, £30 in all will be required to serve in State-aided schools for a period of two years.

VI. Students who receive remission of fees together with bursary allowances of more than £30, but not exceeding £60 in all, will be required to come under a similar obligation to that indicated above for a period of three years.

VII. Students who receive remission of fees together with bursary allowances of more than £60, but not exceeding £90 in all, will be required to come under a similar obligation to that indicated above for a period of four years.

VIII. Students who receive remission of fees together with bursary allowances of more than £90 in all will be required to come under a similar obligation to that indicated above for a period of five years.

IX. Students who, after serving as teachers during a part of their period of obligation, desire to leave the profession will be held bound to repay the sums granted to them in proportion to the length of service unfulfilled. In the case of teachers who have earned their parchment certificates, and have completed a further period of service of at least one year, the Provincial Committee may, on good cause shown, consider what part (if any) of the sum still repayable may be remitted.

A joint meeting of the Education and the Finance and Property Sub-committees of the Aberdeen Provincial Committee on the Training of Teachers unanimously adopted the foregoing recommendations, with an amendment that Art. B. IV. should provide that English and physical instruction shall be obligatory subjects for every student.

CORRESPONDENCE.

[*We do not hold ourselves responsible for the opinions expressed by our correspondents.*—Ed. *E.T.*]

PROGRESS OF SIMPLIFIED SPELLING.

To the Editor of "The Educational Times."

Sir,—The Simplified Spelling Board, which held its first annual meeting in New York on April 3, reports that thirteen thousand persons have signed the agreement to use all or some of the three hundred simplified forms, President Roosevelt and many other officials in the executive departments of the United States Government being of the number; a hundred newspapers and magazines are using some or all of the new forms; fifteen hundred firms and business houses are employing the simplified spellings in their correspondence and advertisements; two thousand members of the faculties of American colleges and universities have formally signed the agreement, and are giving the movement their cordial support; five thousand teachers and adherents of the movement; the school systems of many cities and towns permit the teaching of the new forms in their class rooms; several spelling books have appeared with them; several normal schools have adopted the new spellings; the State Teachers' associations have recently approved of the simplified forms; the Modern Language Association has decided to use them in its publications; the editors of the six great dictionaries of the English language—"Webster's," "Century," "Standard," "Oxford," "English Dialect," and "Skeat's"—have approved of the movement, and are now members of the Board; many publishers have expressed their willingness to use the new spellings in their publications; and the Board considers "the outlook of simplified spelling is bright," and is preparing for an active movement amongst professors, teachers, librarians, scientists, army and navy authorities and publishers.

The Right Hon. James Bryce, British Ambassador at Washington, has written to the Simplified Spelling Board, expressing his approval of the simplified spellings suggested by the Board, and Mr. William Archer, of the *Tribune*, speaking at the annual dinner of the Simplified Spelling Board, thought it was time a more rational method of spelling were adopted.—I am, Sir, &c.,

Hetton-le-Hole, *April* 12, 1907. H. Drummond.

A Nature Study Course for Women will be held at the Horticultural College, Swanley, Kent, July 27 to August 10. Particulars from the Principal.

WILLIAM DOVE: A PRIVATE-SCHOOL MASTER.

By H. Holman, M.A., H.M.I.S.

I.

"Let us praise noble men and the fathers that begat us," says that fine old prayer for pious founders of seminaries for training in religion and sound learning. Not less ought we to honour and commemorate those who were before their times in sound ideas and reasonable methods in education. Such a one was William Dove, who had a private school some eighty years ago. Of his earlier history the writer has no information, and the following sketch applies to his school as it was during the fifties and sixties.

The school was at Making Place Hall, Rippondon, near Sowerby Bridge, and was called "The Commercial College." In the June and July (1861) number of the *Commercial College Magazine* the name of the house is explained thus: "Take away the suffix *ing*, which is a word of Saxon origin, denoting activity, and we have *mak*, which is at once recognized as the verb 'make'—a common verbal monosyllable! It is necessary to go back a century or more, and take a peep in at the Place. Here are seen hand-looms, and seated at them busy weavers skilfully plying the shuttle, weaving or *making* woollen cloths and other fabrics. Here, then, is the key to its derivation." This meaning is very ingeniously played upon by a pupil, aged fourteen years, who contributes the article upon the history of the school from which the above is taken. He writes: "It has been indeed 'a Making Place': and is it not so still? The name 'Making Place' is, and will long be, familiar to hundreds who have in it been made fit, fully equipped, for entering on the great arena of life, and who are therein 'making' their 'place.'"

The Aim of the School.

This is very plainly set forth in a circular to parents and guardians (1858). Herein Mr. Dove writes:

The necessity of a reform in the prevailing system of Middle Class Education has long been felt. I have for the last 25 years marked well the course taken for Educating the sons of commercial men, intended for business, and have for the greater part of that time been earnestly labouring to bring round a better system, by walking out of the old beaten track, introducing more practical, common, or every-day subjects, and at the same time endeavouring to find the nearest route to them.

None the less he was quite willing, and well prepared, to provide a course for those pupils whose parents wished they "should compete for the title of A.A. (Associate of Arts)," Oxford.

School Organization.

Having a clear and definite aim, the school had also a very comprehensive and intelligent organization. To begin with, Mr. Dove was clearly of opinion that a Jack-of-all-trades is master of none in school affairs, as in others. He had, therefore, "practical and trained men, chosen for their ability in teaching certain Branches," as his assistant masters. And, he says: "The principle of division of labour, thus carried into practice, in this school, has been productive of the most beneficial results, and has convinced many of the fallacy of one man attempting to teach several different subjects effectually."

That this principle was honestly observed is shown by the evidence of a pupil who tells me that a civil engineer who had been in business as a marine shipbuilder, in London, and received his education in France, was one of the masters; the drill sergeant was an old Army man; the teacher of commercial subjects had been manager of a mill; a former Ordnance-map surveyor took a class in surveying an actual township (two miles square), on the base line system; the dancing master was from Her Majesty's Opera and had trained women for the ballet; the chemistry was taught by a German; and a famous Yorkshire singer (Mrs. Sunderland) visited the school every week to teach music, in addition to the resident teacher. There were, altogether, nineteen assistant masters, who were resident and gave their whole time to the work of the school. If, as most would agree, the measure of the teacher is the final measure of the school, then a sure and solid foundation was laid in this one for a large share of success.

The "Tabular Plan of Studies" shows a rare insight, and a sound grasp of the true principles of adapting means to an end. There were five "Plans of Study" to "assist the parents of pupils in directing their sons' education. Forty-two hours per week were given to lessons, and were used as follows:—

I. *For Boys under ten years of age.*—Spelling and Reading, 6; Writing, 6; Arithmetic and Tables, 9; English Grammar, 6; Geography, 3; History (Sacred and Profane) 3; Composition and Dictation, 6. The remaining three hours may be devoted to any of the above Branches in which the Pupil is most deficient, or to Latin; in the latter case, however, it would be well to give an additional three hours to this Branch, and so much less to English Grammar.

II. *Ordinary Commercial Education.*—Reading and Dictation, 3; Writing, 3; Arithmetic and Short Mental Calculations, 9; English Grammar, 6; Geography and History, 6; Composition, 3; Book-keeping by Single and Double Entry, Correspondence, and Shorthand, 5; French, 6.

III. *Superior Commercial Education.*—Reading and Dictation, 1; Writing, 1; Arithmetic and Short Mental Calculations, 4; English Grammar, 3; Geography and History, 3; Composition, 3; Book-keeping by Single and Double Entry, Correspondence, and Shorthand, 6; French, 3; German, 3; Geometry, 3; Algebra, 3; Chemistry, 3; Mechanical Drawing and Mechanics, 6.

IV. *Education in Mathematics and other special subjects.*—English Grammar and Composition, 3; Shorthand, 1; Arithmetic and Slide Rule, 3; Geometry, 6; Mensuration, 3; Algebra and Trigonometry, 10; Mechanics and Natural Philosophy, 6; Chemistry, 4; Mechanical Drawing, 6. As pupils become advanced in Geometry, Algebra, and Trigonometry, the time set apart for those subjects may be devoted to Navigation and the Differential and Integral Calculus.

V. *A Classical Education.*—Latin, including Ancient Roman History and Geography, Translations, &c., 24; Greek, including Ancient Greek History and Geography, Translations, &c., 12; English Classical Literature, including Composition and Analysis, 6.

Following the above, and under the head of "Remarks," are these very suggestive statements, among others:

Pupils ought not to require much instruction in Writing, Reading, English Grammar, Arithmetic, &c., after 12 years of age, and might, in a great measure when previously well prepared, discontinue the class study of these branches, and devote the time set apart for them to French, German, Chemistry, Drawing, Music, or other branches. . . . If the pupil be intended for a profession in which a knowledge of the Classics is requisite, it is necessary that he should devote at least four or five hours per day, for several years, to Latin alone. To become a thorough Classical scholar is the work of a lifetime.

Besides the above there were two "special classes for the reception of pupils whose education from previous ill-health *or other causes* has been neglected. The instruction afforded to these classes will embrace Spelling, Reading, Writing, English Grammar, Business Composition, Mental Calculations, and Book-keeping."

Not only was there this ample choice of groups, but the "selective" principle was carried out so that each pupil might receive "instruction in those branches of study requisite for the particular business or profession for which he is intended, keeping in view the period he is likely to remain at school, as well as his proficiency in some branches and deficiency in others." Further than this the special aptitudes of pupils were, as far as possible, discovered, and developed; for "when the business or profession has not been determined upon, an education likely to be generally useful is imparted, and an attempt is made to develop the leading characteristics of the pupil's mind, by special instruction in those subjects for which he manifests a peculiar aptitude." William Dove was indeed a wise schoolmaster.

They were no sluggards at Making Place Hall. Work began at seven in the morning, and, with intervals of one hour from 8 to 9, 1 to 2, and 6 to 7, lasted till 8 in the evening. To prevent any waste of time the boys had "drilling and dancing from 6 to 7 o'clock a.m. in the summer months." On Wednesday afternoons the boys had "drilling, gymnastics, dancing, singing, or elocution," and on Saturday afternoons "liberty or confinement, according to conduct."

Again, it is said in the prospectus that—

As it is an every-day occurrence for Boys to be thrown into a sphere for the duties of which they have no aptitude, and in which, at the best, they may only attain mediocrity, the Principal, having a Staff of Twenty Masters (many of whom are *practical* men), will, with the concurrence of the Parents, place the Pupils under each, for a short period, in order to ascertain the Business or Profession for which they may be fitted, and in which they may be trained to take a first-class position.

It would be difficult to devise a more intelligent and practical plan for discovering any latent power possessed by a pupil. How much intellectual and industrial waste we suffer, nationally and individually, through the lack of such a scheme, thoroughly and universally applied, it is impossible to calculate.

As a rule lessons were put down for an hour on the school

time-table, but "between each of the following hours, viz., 9, 10, 11, 12, and 3, 4, and 5, ten clear minutes are allowed for recreation." On Wednesday and Saturday mornings, when lessons were shorter—30 or 40 minutes on the time-table—five minutes' recreation between lessons were given. A very wholesome unbending of the mental bow was thus secured.

The early hour (7 to 8 a.m.) was taken by the Principal himself, and appears on the time-table thus:—"On Mondays, Tuesdays, Thursdays, and Fridays, Trials by Jury. Illustrations showing how Trade is formed, and confidence established. Lectures on Enterprise and Common Things, and on the Practical Duties of every-day life." It is interesting to notice this early anticipation of teaching about "Common Things," now so properly emphasized in our public elementary schools.

There is a shrewd reminder to the staff in the work allotted for 7 to 8 p.m.:—"In order that no Branch or Lesson be omitted, from any Master being too late for his class, the time is made good in this hour." Otherwise this time was used for "Music, Dancing, Drilling, Elocution, Study, or Play, agreeably to each Pupil's particular desire." Those who know from practical experience, or study, the great importance of good organization in school work will not need to be told how much, and how great, wisdom there is in such a scheme as here sketched.

(*To be continued.*)

MEETING OF THE COUNCIL OF THE COLLEGE OF PRECEPTORS.

A MEETING of the Council was held at the College, Bloomsbury Square, on April 20. Present: Dr. Wormell, President, in the chair; Prof. Adams, Dr. Armitage Smith, Mr. Baumann, Rev. J. B. Blomfield, Mr. Bowen, Mr. E. A. Butler, Mr. J. L. Butler, Mr. Hawe, Miss Jebb, Rev. R. Lee, Rev. G. E. Mackie, Mr. Pinches, Miss Punnett, Rev. J. Stewart, and Mr. Walmsley.

The minutes of the last meeting were read and confirmed.

The Diploma of Associate was granted to Miss A. Kelly and Miss J. I. Melvin, who had passed the required examination.

It was resolved that papers be set in Welsh for the Certificate Examinations.

The report of the Finance Committee was adopted.

Prof. L. W. Lyde, M.A., University College, London, was elected a member of the Council.

The following persons were elected members of the College:—

Mr. J. W. Cheshire, A.C.P., 15 Queen's Road, West Didsbury, Manchester.

Mr. E. F. Hamer, B.Sc.Vict., A.C.P., North Lea, Wirksworth.

Mr. E. Ruf, B. ès L. Univ. of France, 17 Cranworth Gardens, Brixton, S.W.

Mr. F. A. Shaw, L.C.P., Oxford House, Bexhill.

Mrs. E. M. M. C. Shipham, L.L.A., L.C.P., 217 Westcombe Hill, Blackheath, S.E.

Mr. P. H. Stedman, A.C.P., Grammar School, Chorlton-cum-Hardy, Manchester.

Mr. K. S. Vakil, B.A. Bombay, Bhadra, Ahmedabad, India.

Mr. J. R. Wodhams, B.A. Lond., The Grammar School, Newton Abbot.

The following books had been presented to the Library since the last meeting of the Council:—

By EDWARD ARNOLD.—Farrer's Lamartine's Le Manuscrit de ma Mère; Stobart's The Johnson Epoch.

By G. BELL & SONS.—The York Poetry Books, Book III.

By A. & C. BLACK.—Morgan's Arithmetical Exercises, Book II.

By BLACKIE & SON.—Letters to Young Rugby Football Players, by XVIth Man; Barlet and Cornuel's Huon de Bordeaux; Carlyle's On Heroes and Hero-Worship; Prescott's Capture of Mexico; Virgil's Georgics, Book III.

By the CAMBRIDGE UNIVERSITY PRESS.—Gorse's School Algebra; Hughes and Stern's Method of Teaching Chemistry in Schools; Innes's History of England; Sidgwick's Historical Ballads.

By MACMILLAN & CO.—Percival's Tennyson's In Memoriam; Spence's Episodes from Southey's Life of Nelson.

By METHUEN & CO.—Rhodes's School History of Lancashire; Rubie's First Book of Kings; Williamson's Easy Poetry Book.

By J. MURRAY.—Edmonds and Spooner's Story of English Literature, Vol. I., and Readings in English Literature (Junior Course, Vol. I., Intermediate Course, Vol. I., and Senior Course, Vol. I.); Pressland's Murray's School Arithmetic, and Supplementary Exercises to the same; Stallworthy's Le Français parlé et écrit.

By G. PHILIP & SON.—Miles and John's Builders of the Body; Williams's Junior Physical Geography.

By the GENERAL MEDICAL COUNCIL.—Medical Register, 1907, and Dental Register, 1907.

Supplement to R.U.I. Calendar for 1907; Joint Scholarships Board Year-Book, 1906–7.

REVIEWS.

THE CHILD.

Das Buch vom Kinde: ein Sammelwerk für die wichtigsten Fragen der Kindheit, unter Mitarbeit zahlreicher hervorragender Fachleute herausgegeben von Adele Schreiber. 2 Bände. Mit Abbildungen und Buchschmuck. Geb. 18 M. Teubner.

These volumes exhibit a most comprehensive and critical survey of the child—body and mind, upbringing and education, family and social relations—down to the time for entering upon a calling and assuming a definite positive workaday activity among his (or her) fellows. The inquiry is pursued very carefully, not only from the point of view of the individual child, but also, and consistently, with an eye to the betterment of the nation and to the progress of humanity. The outlook is at once particular and general, minute and extensive. The editress has enlisted the co-operation of seventy or eighty experts in the various phases of the subject—teachers, clergymen, physicians, psychologists, jurists, artists, authors, officials, men and women. The publisher has furnished illustrations with characteristic liberality, together with 11 plates (in the first volume), most of them in colours. The work is thus an encyclopædia of child training, thorough-going, complete, and abreast of the most advanced thought and knowledge.

The first volume deals with what may be called the private side of the child's life and training, as opposed to the public aspects or relations, which occupy the second volume. An introductory chapter handles the important and difficult questions raised in connexion with the period before birth: marriage, heredity, ante-natal duties of the mother, and cognate ethical considerations. Coming to the subject of the extant child, we find fourteen essays on physical aspects—the beauty of the child, his bodily development, his nutriment at different stages, his clothing, the care of his health generally and of particular organs (eye, ear, &c.), infectious diseases and other illnesses of the period of childhood, and so forth; and seven essays on mental and moral aspects—subjects of extreme difficulty, but treated here with breadth of thought as well as with ample knowledge (so far as knowledge is available), and generally with marked discretion and fruitful suggestion. Next we have seventeen essays upon the home and general training of the child—physical and moral environment, development of speech, employment of the hands, artistic interests and exercises, the picture book and the first steps in reading, play and sports and gymnastic performances, gradual acquaintance with the social circle and with natural objects, religious, ethical, and social instruction, and the formation of character. The treatment follows a general order of natural development, and is adequately detailed, thoughtful, and instructive.

The second volume takes up the public side of the child's existence and activity. He is now sent out to the world of school. The first of the eighteen essays very properly sketches the most important contributions to the theory or the practice of education, mainly by Germans (though Erasmus, Locke, Ascham, and Rousseau are not forgotten), from the time of Karl der Grosse (Charlemagne) to Froebel, with a glance at the recent progress of the education of women. While acknowledging that "diejenige Form wissenschaftlicher Pädagogik, die am meisten Einfluss gewonnen hat und die deutsche Lehrerwelt vielfach noch heute beherrscht, ist die von Herbart," Prof. Dr. Theobald Ziegler, of Straszburg, after enumerating the distinctive points of the system, remarks:

Im übrigen scheitert der Anspruch der Herbartianer, in der Pädagogik ihres Meisters ein noch heute geltendes, wirklich die wissenschaftliche Pädagogik zu besitzen, naturgemäsz daran, dasz die Herbartsche Psychologie veraltet und durchaus unhaltbar und seine wesentlich individualistiche Ethik inzwischen durch eine viel robustere und praktischere Sozialethik verdrängt worden ist. Darum musz die wissenschaftliche Pädagogik von Herbart und seinen allzu formalistisch wirkenden Einflusz losgelöst, auf den Boden der modernen, rein empirisch exakten Psychologie gestellt und aus einer individualistischen Hauslehrerpädagogik in eine weitausgreifende, warmherzige Sozialpädagogik umgewandelt werden. Nur so kann sie als Theorie haltbar und für die Praxis brauchbar gemacht werden.

The various sections of this part deal very fully with the schools of all sorts and grades, public and private, for boys and for girls, together with matters of health, holidays, crèches, provision of

meals for the unfed, savings, life assurance, &c. A separate section is devoted to defective and deformed children—deaf, blind, weak-minded, cripple. Then the child is considered in relation to society and to the law, with plenty of statistics. The final division is concerned with the future calling of the child, and his (or her) preparation for it. The whole work is most interesting and thorough, and our educationists will do well not to overlook it. Some heavy articles are counterbalanced by unexpectedly lively disquisitions, and generally the style is simple and lucid.

THE FIRST TWO TUDORS.

The Political History of England. Vol. V.: *From the Accession of Henry VII. to the Death of Henry VIII.* (1485–1547). By H. A. L. Fisher, M.A., Fellow and Tutor of New College, Oxford. (7s. 6d. net. Longmans.)

The present volume compares very favourably with the best of its predecessors. It covers but two reigns, and indeed two-thirds of it is devoted to Henry VIII. Mr. Fisher takes up Henry VII., where Shakespeare leaves him, on the field of Bosworth, triumphant at twenty-eight years of age, and experienced in adventures and intrigues. He states forcibly the problems that Henry had to tackle—the eradication of the spirit of faction, the restoration of peace and order, the condition of Ireland, and the foreign menace of Yorkist disaffection utilizing the ambiguity of the new King's title to the throne—and he traces lucidly and critically the operations towards solution. He defends Henry's settlement of his "one and only foreign war" by the peace of Etaples on amply sufficient grounds; describes fully and vividly the imposture of Perkin Warbeck, whose adventures "only seemed to strengthen Henry's position and to reveal Henry's consummate capacity"; relates the commercial struggles against Hanseatic and Venetian competition, and the oceanic enterprise led by John Cabot; marks distinctly the real bearings of the alliances contracted with Spain and with Scotland; and, in connexion with the operations of Empson and Dudley, gives a luminous sketch of ecclesiastical conditions. A very fine chapter on the dawn of the English Renaissance closes the story of the reign. Mr. Fisher's estimate of Henry is mostly selected from the eulogies of Bacon, Polydore Vergil, and Bishop Fisher's funeral oration.

The reign of Henry VIII. furnishes ampler dramatic scope and larger interests. Without diminishing the stature of the King, Mr. Fisher gives strong prominence to Wolsey: "probably no subject of the crown in the whole course of English history left upon his contemporaries so deep an impression of wealth, power, and magnificence"; and the author is careful to exhibit the working of Wolsey's immense abilities and energy. Cromwell also is felt as a still more terrible force in the great alterations in the structure of the ecclesiastical system—the abolition of the Papal power, the destruction of the monasteries, and the introduction and compulsory use of the vernacular Bible; though he is not perhaps so prominent personally. The many-sided process of the Reformation is patiently and carefully developed. The wretched marriage affairs of Henry are duly followed through all their diplomatic and jesuitical turnings. Mr. Fisher briefly outlines the King:

> Henry, at least, understood his own age. Gross, cruel, crafty, hypocritical, avaricious, he was, nevertheless, a great ruler of men. His grasp of affairs was firm and comprehensive; his devotion to public duty was, at least, after Wolsey's fall, constant and sustained by a high and kingly sense of his own virtues and responsibilities. Before the judgment seat of his watchful, exacting, and imperious conscience, he at least was never found wanting. The fragments of his eloquence which have been preserved are superb; his State papers are rich with the glow of a powerful and impetuous intellect. Despite violent oscillations of mood, he saw the large objects of policy with a certain steadfast intensity—the preservation of the dynasty, the unity of the State, the subjection of Scotland. In a sense he may be said to have created the Royal Navy, founding a guild, now known as Trinity House, for the supply of trained pilots, organizing, in 1546, the first regular Navy Board, and leaving at his death a fleet of seventy-one vessels. His Government, which depreciated the coinage, flogged vagabonds, broke up institutions which had provided relief to the poor, burned heretics at the stake, stamped out devotion to the old order with ruthless cruelty in many a Yorkshire and Lancashire village, was yet a Government to which in all the ordinary concerns of life lowly men might look for even-handed justice. . . . The patriotism of England mounted fast and high under the proudest ruler in Europe.

We are not so sure about Henry's conscience; and, unless a full meaning is read into the opening adjectives, the estimate may appear to be overbalanced to the favourable side. The volume generally is of very high quality; perhaps its most marked characteristic is lucidity, alike in arrangement and in expression. A certain ironic touch is applied not unfrequently with great effect. On page 47 "natural" should be "national" (interests); and on page 186, in the description of Flodden Field, Barmoor should be "east," not "west" (of the Scottish camp)?

PASTEUR.

The Life of Pasteur. By René Vallery-Radot. Translated from the French by Mrs. R. L. Devonshire. (7s. 6d. net. Constable.)

This "popular edition" is welcome as a means of spreading a just impression of the character and life-work of one of the most simple, high-minded, devoted, and eminent men of science of our time. Like all investigators that open up new paths of knowledge, Pasteur had his full measure of conflict with scientific opponents as well as with popular prejudices; and he never failed to answer a challenge with vigour and persistence. "I am not often credited with moderation," he once said, "and yet I am the most hesitating of men, the most fearful of responsibility, so long as I am not in possession of a proof. But when solid scientific proofs confirm my convictions no consideration can prevent me from defending what I hold to be true." In reading of these conflicts one is frequently reminded of Huxley. Perhaps Pasteur's name is most popularly associated in English minds with his method of treatment for hydrophobia; perhaps his controversy just thirty years ago with Prof. Charlton Bastian on the extremely difficult question of spontaneous generation may also be remembered. But, far-reaching as these questions are, they are but two out of the numerous applications of Pasteur's scientific method. We need mention only his researches in crystallography, on the diseases of wine and beer and other phenomena of fermentation, on diseases of silkworms, on virus ferments manifested in infectious diseases. In sericiculture alone the losses in twenty years, before Pasteur's intervention, rose to 1,500,000,000 francs. Pasteur found the cause, and the means of stopping the destructive epidemic. The disease known as *charbon* or splenic fever was ruining agriculture. Pasteur again demonstrated the cause and the remedy of the mischief. He combated the anthrax disease that used to kill some 20,000,000 francs worth of horses, oxen, and sheep in France every year; the *rouget* disease, which decimated swine; the cholera, which made havoc among poultry. At the Maternity Hospital in Paris the observance of his directions reduced the mortality from puerperal fever from 100 to 1 per 1,000 cases. "M. Pasteur's discoveries," said Paul Bert, "after throwing a new light on the obscure question of fermentations and of the mode of appearance of microscopic beings, have revolutionized certain branches of industry, of agriculture, and of pathology." "Allow me," wrote Dr. (now Lord) Lister in 1874, "to take this opportunity to tender you my most cordial thanks for having, by your brilliant researches, demonstrated to me the truth of the germ theory of putrefaction, and thus furnished me with the principle upon which alone the antiseptic system can be carried out." Such facts and testimonies cannot but arrest the grave attention of thoughtful people. This biography presents a detailed account of a noble character and of a severely laborious life devoted to science and to France. The incidental glimpses of contemporary men of science are also of the greatest interest.

SETS OF POINTS.

The Theory of Sets of Points. By W. H. Young, M.A., S.D., and Grace Chisholm Young, Phil. Doc. (Gött.). (12s. net. Cambridge University Press.)

A special interest attaches to the publication of this able treatise, seeing that it claims to be the pioneer among works whose object is to give systematically and with completeness (in so far as our knowledge permits) a treatment of the entire theory which the title connotes, and which was originated and developed by Georg Cantor, but whose literature, as given by him, consists mainly in detached memoirs contributed to well known mathematical periodicals. Since Cantor first expounded the principles of the theory of sets of points the subject has occupied the attention of many mathematicians. There must always exist numerous difficulties with which the author of a work on an advanced and also comparatively new subject has to contend. In the present case such have been increased (1) by

the necessity of determining the best method of arrangement unaided by any hitherto well established system of treatment; and (2) by the endeavour, whilst producing the work, to add, through independent research, to the already existing store of knowledge. It is anticipated that the theory will in the future exert a very marked and beneficial influence in most branches of mathematical and physical science, as a natural result of the power which a knowledge of its outlines is calculated to afford when infinite series of operations are under consideration. The language in which the necessarily large numbers of definitions are clothed bears testimony to the evident care bestowed on making the text as convincing and explanatory as possible, and the same may be said with respect to the methods of enunciating the many theorems which find place in the course of the work; nevertheless, it would be too much to expect that the pages should not require very serious study in order that their contents may be thoroughly mastered by the average mathematical reader. The first chapter of the work introduces the student to fundamental ideas about numbers grouped together either without reference to order or in ordered series, developed in obedience to known laws; the need for the recognition of irrational numbers is established, as also for the existence of the number infinity; and a clear conception of the distinction between algebraic and transcendental numbers is created in the reader's mind. The geometrical representation of numbers on a straight line forms the subject-matter of the second chapter, and the simplicity with which the infinite succession of numbers may be constructed — at least, theoretically — possesses a fascination of its own. The following chapters, until the middle of the work has been more than reached, deal with the descriptive theory and the properties of linear sets of points—with the potency, the content or absolute magnitude, and the order of such "sets"; whilst chapter vii., which immediately precedes the discussion of "sets" situated in a plane, is devoted to Cantor's numbers. The treatment of "sets of points" not all lying along a straight line occupies the later portion of the volume, and the subject is discussed fully for the plane, but so that the principles may be extended with comparative ease to higher space. The work is unquestionably a contribution of the first importance to English mathematical literature, the full value of which must, however, wait to be justly estimated until it has stood the tests of time and of comparison with other treatises which will doubtless appear in the future on the same theory.

GENERAL NOTICES.

CLASSICS.

Select Epigrams from the Greek Anthology. Edited by J. W. Mackail, M.A., LL.D., Professor of Poetry in the University of Oxford. (2s. net. Longmans.)

This is a welcome addition to "Longmans' Pocket Library"—a charming series. The volume contains the Greek text of Dr. Mackail's large work with the same title. While acceptable to lovers of poetry generally, it should be useful as well as agreeable to pupils in the upper forms of schools.

First Book in Latin. By Alexander James Inglis, A.B., Instructor in Latin, and Virgil Prettyman, A.M., Pd.D., Principal, Horace Mann High School, Teachers College. (3s. 6d. Macmillan.)

The volume is meant to lead up to Caesar. It develops and illustrates the elementary principles in 65 lessons, which "should be mastered in 20 weeks." The graduation is very well managed, the explanations are usually brief and pointed, and we like the abundance of exercises. We do not like the concurrent exposition of English (or general) grammar: it may too often be a necessity, but it is not a virtue, to "develop the principles of inflection and syntax without assuming much knowledge of English grammar on the part of the student." English should come first, and adequately. The forms of declension, conjugation, &c., are fully exhibited in an appendix, but, if they have got to be learnt, we do not see why they should not stand in their proper place in the text. Vocabularies are usefully supplied. We would invite the attention of the authors to the rationale of the punctuation in the following three successive sentences (page 205): "1. Milites, quos imperator misit, fortiter pugnant. 2. Videt milites quos imperator miserit, fortiter pugnare. 3. Vidit milites quos imperator misisset fortiter pugnare." Both in Latin and in English there is an important practical principle of punctuation involved in such constructions—of punctuation because of sense. The Germans, *pessimo exemplo*, ignore it; but there it is.

Mr. Murray has just published the *Proceedings of the Classical Association, October*, 1906 (2s. 6d. net)—a full account of the fourth general meeting, held at Manchester, including the substance of papers read and discussion thereon, and the report of the Committee on the pronunciation of Latin (and Greek), together with rules and list of members. Also *The Year's Work in Classical Studies*, 1906, edited for the Council of the Classical Association by W. H. D. Rouse, M.A., Litt.D., Head Master of the Perse Grammar School, Cambridge (2s. 6d. net). There are twenty articles on different divisions of the subject, with a general introduction by Dr. S. H. Butcher, M.P. The volume will be interesting and helpful to classical teachers and others that wish to keep abreast of the latest developments of classical study and research. As Dr. Butcher says: "No one can peruse this volume without realizing that classical study in our day has become in an amazing degree vital and progressive." It will give the croakers over the future of the classics delightful shudders.

MATHEMATICS.

Elements of the Infinitesimal Calculus. By G. H. Chandler, M.A., Professor of Applied Mathematics, McGill University, Montreal. (8s. 6d. net. New York: Wiley. London: Chapman & Hall.)

This is a third edition, but the work has been rewritten, and many changes and additions have been made, bringing it thoroughly abreast of newest requirements. An introductory manual for students generally, it is more especially addressed to students of engineering and of other branches of applied science. The workmanship is thoroughly good. Eight short tables, intended to facilitate curve-tracing as well as the rapid calculation of integrals, &c., are added in supplement of the ordinary mathematical tables. Type and get-up are agreeable. There are 146 figures.

The Elements of Geometry in Theory and Practice. By A. E. Pierpoint, B.Sc. (2s. Longmans).

Mr. Pierpoint divides his subject in the usual way, giving a preliminary experimental course, followed by sections devoted respectively to theorems and problems, the last two being intended for concurrent study. Part I. includes the substance of the first thirty-four propositions of Euclid's "Elements," but the work, as a whole, is arranged to meet the requirements of candidates for the first examinations of various universities. The text-book compares very satisfactorily with others of similar scope, and should therefore take a good place. Some of the inaccuracies of language which occur in many of the modern elementary books have been corrected. There is much to be urged in favour of the new methods; nevertheless, the departure from Euclid's sequence does not always lead to demonstrations as good as his.

Elementary Geometry, Books VI. and VII. By W. M. Baker, M.A., and A. A. Bourne, M.A. (1s. 6d. Bell.)

The text gives clear demonstrations of the propositions of the Eleventh Book of Euclid, and discusses also such other portions of solid geometry as enter into a student's recognized elementary course on the subject. The definitions, necessarily numerous, are concise and good. In every respect the little text-book promises to be thoroughly useful and helpful.

Text-Book in Algebra. By Webster Wells, S.B., Professor of Mathematics in the Massachusetts Institute of Technology. (5s. Heath.)

The first 458 pages simply repeat Prof. Wells's excellent "Algebra for Secondary Schools." About 100 pages are now added—on compound interest, continued fractions, summation of series, determinants, theory of equations, solution of higher equations — "to meet the entrance requirements of the most advanced colleges and scientific schools." Answers are appended. The exposition is very lucid and satisfactory, the examples have been devised with marked care and judgment, and altogether the work is most able and suitable. The volume is well printed, and the binding is strong and flexible.

A New Junior Arithmetic. By H. Bompas Smith, M.A. (2s. 6d. Methuen.)

A practical little text-book, in which it is the writer's aim to train young pupils to look on arithmetic as a subject calling principally for the use of common sense, and not as a collection of difficult rules which must first be learnt and then be applied mechanically. Suitable questions and simple discussions lead the beginner to rediscover independently, at least in part, the process required for the solution of any given type of problem. Intelligence, however, will not by itself produce a competent arithmetician; rapidity and accuracy are also essential; hence the introduction of a quantity of material for systematic mental work. The author desires to cultivate in his readers many valuable habits—*e.g.*, he dwells on the importance of forming in advance an idea as to the approximate answer to a problem, of considering whether any obtained solution is reasonable, and of testing the accuracy of partial results.

Pitman's "Method" Arithmetics. Parts I.–III., 2d.; IV. and V., 3d.; VI. and VII., 4d.

A large and varied collection of exercises on the ordinary rules of arithmetic. The compilation is so arranged as to illustrate the principles laid down in Mr. G. R. Purdie's "Method in Arithmetic," a work written for teachers. The questions deal with the concrete rather than the abstract, and the largeness of the number given on the various rules provides means for plenty of practice in them. The answers to each part form a separate small volume, and give satisfactory results when tested at random for accuracy.

ENGLISH LITERATURE.

Everyman's Library. Edited by Ernest Rhys. (1s. each volume. Dent.)

This comprehensive and excellent collection has been reinforced by a series of nine volumes of Ruskin's works (Nos. 208–216)—five containing *Modern Painters*, with an introduction by Lionel Cust, M.A., Keeper of the King's Pictures; three containing *The Stones of Venice*, with an introduction by L. March Phillipps; and one containing *The Political Economy of Art* (*A Joy for Ever*), *Unto this Last*, and *Essays in Political Economy* (*Munera Pulveris*), with an introduction by Sir Oliver Lodge. The introductions are substantial and instructive, competently written by well known art critics and disciples of the Master. The whole of the original illustrations, whether in colour, line, or tone, are included—a feature of great value as well as of much interest. The volumes are very carefully produced, so that they would probably overcome even Ruskin's dislike of cheap editions. Further volumes of Ruskin's works are announced to follow. The series will be gratefully and widely welcomed.

The Red Letter Library. (2s. 6d. net each volume. Blackie.)

New issues in this charming series are: (1) *Poems by Robert Burns*, with an introduction by Neil Munro; (2) *Essays by William Hazlitt*, with an introduction by Charles Whibley; (3) *Poems by Matthew Arnold*, with an introduction by Alice Meynell; and (4) *Walden, by Henry David Thoreau*, with an introduction by Richard Whiteing. The introductions are brief, but discriminating. Each volume has a frontispiece illustration, and the whole get-up is tasteful and delightful.

The Red Letter Shakespeare. Edited by E. K. Chambers. (1s. 6d. net each volume. Blackie.)

We have three more volumes of this most attractive, handy, and agreeable series—*Hamlet*, *King Lear*, and *Titus Andronicus*. Mr. Chambers's introductions are well informed, judicious, and popular in style.

MODERN LANGUAGES.

Petite Phonétique Comparée des principales Langues européennes. Par Paul Passy, Docteur ès Lettres, Directeur-adjoint à l'Ecole des hautes Etudes. (M. 1.80. Teubner.)

We are afraid Dr. Passy is not far wrong when he says that foreigners scarcely ever succeed in speaking French quite *well*—"c'est-à-dire, tout-a-fait comme nous le parlons." Even Englishmen that know the language very well are sometimes "incapables d'articuler d'une manière intelligible un petit mot comme *vu* ou comme *été*." But then it is the "petit mot" that is generally most intractable. Yet the Englishman is not singular in this failing. A South German will say "il pleut *des chats*" when he means "il pleut *déjà*": still, after all, he might do worse. The Italian will say that he "á eté *un âne* en France" when he means "un an": which is somewhat ingenuously self-derogatory, and, what is perhaps worse, misses the point. However, Dr. Passy genially acknowledges that Frenchmen deal with other languages "d'une manière analogue." The remedy is to study his little book, which is a scientific, ample, and capable treatment of the subject, practical and interesting throughout.

Dent's First Spanish Book (Primer Libro de Lengua Castellana). By Frank R. Robert, Whitechapel Foundation School. (2s. net. Dent. Modern Language Series.)

Mr. Robert uses the reform method to introduce the beginner at the same time to the Spanish language and Spanish life. The vocabulary is well selected and is worked up in interesting lessons, which are followed by extracts in prose and in verse, a phonetic transcript of a few pages, a *vocabulario*, and a *parte comercial* (correspondence, &c.). A number of illustrations for the text of the lessons are furnished by J. A. Symington. An exceptionally good introduction to the study of Spanish.

Mr. Nutt publishes the fifth, revised and enlarged, edition of *French Idioms and Proverbs*—a "Companion to Deshumbert's 'Dictionary of Difficulties'"—by de V. Payen-Payne, Principal of the Kensington Coaching College (3s. 6d.). It is very useful for reference, and it contains many things of incidental interest. There is an index of corresponding English proverbs.

Der englische Dolmetscher, "mit englischer Aussprache" (Methode Thimm), revised and enlarged by W. von Knoblauch, who may be supposed to understand fully the German point of view, will no doubt be specially useful to German visitors in the coming months (1s. 6d., cloth, Marlborough).

HISTORY.

Outlines of European History. By A. J. Grant, M.A. Cantab., Professor of History in Leeds University. (3s. 6d. Longmans.)

"A more general survey of history," says Prof. Grant, "has this advantage over merely national history, that it implies a far truer notion of the nature of European progress by eliminating national egotism and showing the interaction of State upon State and the mutual obligations of all the national groups into which the human family is divided." He distributes the contents of his new volume in three Parts: (1) the Classical World (Greece and Rome), down to the death of Constantine; (2) the Middle Ages, down to the fourteenth century—practically a thousand years; and (3) the Modern World—this Part properly occupying nearly as much space as the other two. Prof. Grant selects his matter with care and judgment, and narrates with freshness and point, furnishing a good general view and maintaining the interest of the reader. The selected references at the end of each chapter will be very useful. There are seventeen maps and plans, and nearly a hundred illustrations in the text.

A Concise History of Europe. By Avary H. Forbes, M.A., Barrister-at-Law. (2s. net. Ralph, Holland, & Co.)

Mr. Forbes aims at supplying such a knowledge of the main landmarks of European history as may meet the needs of candidates for Teacher's Certificates under the regulations of the Board of Education. He deals with modern history only, beginning with the fall of Rome. He presents the larger movements and events free from complications of detail, and generally impresses the historical trend with effect. There are eleven maps, five genealogical tables, and a chronological index—all very serviceable.

Russian History. By A. S. Rappoport. (1s. net. Dent. The Temple Cyclopædic Primers.)

The main facts are judiciously grouped and presented. In spite of the narrow space, the narrative is interestingly readable, and it gives a remarkably good impression of the development of Russian history. A chronology and genealogical tables, as well as an index, are appended.

NATURE STUDY.

Nature round the House. By Patten Wilson. With Illustrations by the Author. (2s. 6d. Longmans.)

The volume consists of simple and familiar descriptions of some fifty or sixty of "the 'beasties' of the garden, hedgerow, and coppice—those that are most known and easily seen." The information is presented in an agreeable conversational style, and is sure to be attractive to inquiring little folk. The illustrations are numerous and characteristic.

Messrs. E. J. Arnold & Son have prepared *The "A.L." Leaves*—"a set of 12 leaves of definite form of British timber trees and plants for drawing and observation purposes, from the Orpington Nature-Study prize scheme," selected and arranged by Henry Boult, and contained (with descriptive and teaching notes) in a box (7s.). Each leaf is pressed and preserved between two sheets of transparent celluloid, so that both the upper and under sides of the leaf can be readily examined, and the specimen is indefinitely durable. "Each leaf is typical in shape, and the set forms a carefully graded series showing the various stages from simple leaf, through the intermediate (or lobed) leaves, to compound leaves." For drawing purposes there is a similar variety and graduation. The idea is excellent, and it has been very effectively executed. The "Leaves" ought to be very useful.

Messrs. W. & A. K. Johnston issue *The Nature-Study and Free-Arm Drawing Cards*, "illustrating the correlation of Drawing and Object Lessons," in three parts (1s. 6d. each). The cards are reductions of the same firm's "Nature-Study and Free-Arm Drawing Charts," and are intended to be used in conjunction with these. The drawings represent natural objects easily obtainable. They should be very serviceable for their purpose.

MISCELLANEOUS.

The thirty-seventh annual edition of *The City of London Directory* (12s. 6d., W. H. & L. Collingridge) contains the usual information under the usual divisions, carefully verified throughout, in many points supplemented, and sometimes exclusive. The accuracy of the work is an essential feature, and may be taken to be guaranteed by its continued favour in the eyes of City men, who find it practically indispensable. The biographical section, with portraits, is always interesting. The educational advantages of the City schools, with details as to history, fees, scholarships, &c., are set forth with special care and in adequate fullness. The coloured map has been brought up to date: it is a specially useful adjunct.

Messrs. Aston & Mander (61 Old Compton Street, Soho, W.) publish *The Geometrigraph*, an ingenious instrument for use in the teaching of geometry, arithmetic, mensuration, and trigonometry, designed by P. Abbott, B.A., Head of the Mathematical Department in Regent Street Polytechnic (2s.). It consists of bars, screws, and protractors—the bars "marked one edge in English inches and tenths, and other edge metric in centimetres and millimetres"—which can be fastened together so as to give various geometrical figures composed of straight lines. The instrument will evoke interest, and will no doubt be practically useful.

Messrs. Watts issue for the Rationalist Press Association (1) *Spencer's Essays—a Selection*, and (2) *An Easy Outline of Evolution*, by Dennis Hird, M.A.—being Nos. 29 and 30 of the series of Cheap Reprints (6d. each); and (3) *The Secret of Herbart*, "an Essay on the Science of Education," by F. H. Hayward, D.Lit., M.A., B.Sc., in revised and enlarged form—being No. 12 of the Extra Series (6d.). All the volumes are well printed and agreeably got up. Mr. Hird's volume, which presents a very capable survey for beginners in the subject, has twenty figures. Dr. Hayward's able and piquant essay should be widely read and studied.

FIRST GLANCES.

Education.

Assistant Masters' Association. Report for 1906 (16th year).

Arithmetic, Sixteenth Century, The Educational Significance of, from the point of view of the present time. By Lambert Lincoln Jackson, Ph.D., Head of the Department of Mathematics, State Normal School, Brockport, N.Y. Columbia University Teachers College (Contributions to Education, No. 8).

Board of Education. (1) Report for 1905 on the Victoria and Albert Museum, the Royal Colleges of Science and of Art, the Geological Survey and Museum, and on the Work of the Solar Physics Committee. 1s. (2) Special Report on the Teaching of Cookery to Public Elementary School Children in England and Wales. By the Chief Woman Inspector of the Board of Education. 2d. (3) Reports from Universities and University Colleges participating in the Parliamentary Grant, 1906. 1s. 5d. Wyman.

Chile, Republica de: Anales de la Universidad. Enero-Febrero and Marzo-Abril, 1906. Santiago de Chile: Imprenta Cervantes.
[Boletin de Instrucción pública, and able Memorias científicas i literarias, with illustrative diagrams, &c., appended.]

Drawing. Cambridge Local Examinations, December, 1906: Reports of the Examiners in Drawing, with Syllabus, Copies set, Question Papers, and Specimens of Candidates' Exercises. 1s. Cambridge University Press.

English History, The Religious Teaching of, in Church and School: a paper read at the Carlisle Diocesan Conference, 1890, by the Rev. H. J. Bulkeley, M.A., Rector of Coddington. Republished, with a few alterations, an Introduction, an Appendix (National Hymns and Psalms), and a Preface by the Bishop of Hereford. 1s. net. Elliot Stock.

English: The Place of the Mother Tongue in National Education. By Henry Cecil Wyld, Baines Professor of English Language and Philology in the University of Liverpool. 1s. Murray.

Geographical Section of the Birmingham Natural History and Philosophical Society: Opening Address. By W. W. Watts, M.A., M.Sc., F.R.S., Sec.G.S. 1s. net, post free. Published by the Society at 55 Newhall Street, Birmingham.

Hygiene and Temperance, Memorandum presented by the Committee of the Medical Profession, the British Medical Association, and the Board of Hygiene and Temperance to the President of the Board of Education in furtherance of the Teaching in. With Appendices I. to IV. Birmingham: Cornish. London: Simpkin, Marshall, & Co.

History, Scottish, in our Schools: Urgent Need for Reform. Edited by David Macrae, Hon. President of the Scottish Patriotic Association. Offices of the Association, 179 West George Street, Glasgow.
[*Résumé* of steps taken by Scotch public bodies, and opinions of representative persons, "as to the need in our schools for fuller justice to Scotland and to historic truth."]

Johns Hopkins University Circulars. (1) Notes on Sanskrit. (2) Report of the President of the University (1906). (3) No. 2, 1907. Thirty-first Commemoration Day, &c. With remarkable Address by the Hon. Hannis Taylor on the "Relation of the South to Pending Problems." Baltimore: The University.

L.C.C. (1) Report of the Education Committee submitting Report of the Executive Officer dealing with Industrial and Reformatory Schools for year ended March 31, 1906. 6d. (2) Report of Education Committee submitting Report of the Executive Officer for year ended March 31, 1906, on Accommodation and Attendance in Elementary Schools in the administrative county of London, with accompanying Tables. 5s. King.

Mathematics, The Teaching of, in the Elementary and the Secondary School. By J. W. A. Young, Ph.D., Assistant Professor of the Pedagogy of Mathematics in the University of Chicago. 6s. net. Longmans (American Teachers' Series).

Methodik des Volks- und Mittelschulunterrichts: Der Unterricht im Deutschen. Von Adolf Schultz, Rektor in Berlin. 3 M. Teubner.

Smithsonian Institution. Annual Reports: Reports of the U.S. National Museum for years ending June 30, 1905 and 1906.
[Without the usual appendix of papers based on the collections. These will henceforth be published in other series.]

Sunday Schools, Hints for the Better Organization of. By the Rev. J. O. Bevan, M.A., F.G.S., F.S.A., Fellow of the College of Preceptors and Examiner; Rector of Chillenden, Dover. 6d., post free; to be obtained of the Author.
[Very detailed, careful, and instructive.]

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MATHEMATICS.

16160. (I. Arnold.)—Three points A, B, C are in one right line, and a circle is drawn with A as centre. Find the locus of the intersection of the right line passing through B and one extremity of a diameter of the circle and the right line passing through C and the other extremity of the same diameter.

Solutions (I.) *by* V. Daniel, B.Sc., *and* W. J. Dobbs, M.A.; (II.) *by* James Blaikie, M.A., *and others.*

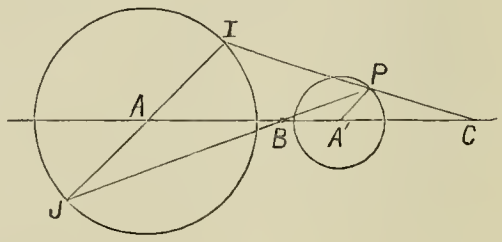
(I.) Let O be the intersection of the lines, and let OK be drawn parallel to the variable diameter to meet ABC in K. Since the extremities of the diameter, its mid-point A, and the point at infinity on it form a harmonic range, their joins to O form a harmonic pencil. Therefore (ABKC) is a harmonic range. Therefore K is a fixed point. Also, if ρ = radius of fixed circle, by similar triangles,

$$OK/\rho = BK/AB = (b-c)/(b+c),$$

where $AB = c$, $AC = b$. Therefore locus of O is a circle with centre at K (the harmonic conjugate of A with respect to BC), and

$$\text{radius} = [(b-c)/(b+c)]\,\rho.$$

(II.) Let IJ be a diameter through A, and let JB, IC meet in P. Draw PA′ parallel to IJ, meeting ABC in A′. The circle described with A′ as centre and A′P as radius is the required locus.



For B and C are clearly the centres of similitude of the circles A and A′, since A′P is parallel to the radii AI, AJ, and, if another diameter I′AJ′ and another radius A′P′ are drawn, I′P′ will clearly go through C and J′P′ will go through B.

15719. (J. J. Barniville, B.A., I.C.S.)—Having $u_n + 2u_{n+1} = u_{n+2}$, prove

$$\frac{2.11.29}{1.3.7.17} + \frac{5.27.69}{1.7.17.41} + \frac{12.65.167}{3.17.41.99} + \ldots = \frac{67}{14}.$$

Solution by the Proposer.

Since x^2+2x-1 is a factor of x^4-4x^2+4x-1, we have

$$u_n - u_{n-4} = 4u_{n-1} - 4u_{n-2}.$$

Let
$$S_1 = \frac{2}{1.17} + \frac{5}{1.41} + \frac{12}{3.99} + \ldots = \frac{13}{42}$$

and
$$S_2 = \frac{2}{3.7} + \frac{5}{7.17} + \frac{12}{17.41} + \ldots = \frac{1}{6};$$

then the given series $= 16S_1 - S_2 = \dfrac{67}{14}$.

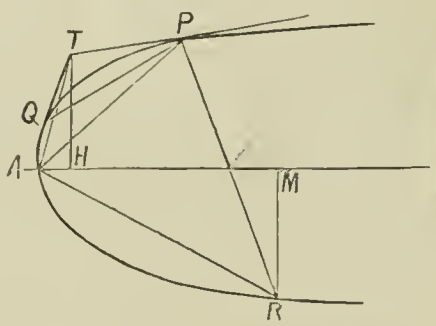
Similarly
$$\frac{7.19.49}{1.5.12.29} + \frac{17.46.118}{2.12.29.70} + \frac{41.111.285}{5.29.70.169} + \ldots = \frac{104}{15}.$$

16105. (A. M. Nesbitt, M.A.)—A chord of a parabola is such that the normals at its extremities meet on the curve. Show, by pure geometry, that the pole of the chord lies on a certain straight line.

Solutions (I.) *by* James Blaikie, M.A.; (II.) *by* M. T. Naraniengar, M.A.; (III.) *by* Henry Riddell, M.E.

(I.) In Milne and Davis, *Conics*, Art. 78, it is shown that the chord in question passes through a fixed point on the axis—namely, the image of the vertex in the directrix. It follows that its pole lies on the chord of contact of the tangents drawn from this point, which is the ordinate through a point on the axis found by producing AS its own length.

(II.) We know that, if PQ be the chord, and PR, QR the normals at P and Q, the sum of the ordinates of P and Q is equal to that of R. So that 2TH = RM (T being the pole of PQ). Again, because PQRA is cyclic, the angle TAR is a right angle, and therefore $TH/AH = AM/RM = RM/4a$; therefore $AH = 2a$ = const., or the locus of T is a straight line perpendicular to the axis.



[Rest in *Reprint*.]

Arithmetical Note.

By Shishir Kumar Maitra, B.A.

To show that, if, and only if, n be a prime number,

$$(n-1)(2n-1)\ldots[(n-2)n-1]$$

is divisible by $(n-1)!$.

We propose first to show that, if b be any number less than n, then the series $(n-1)(2n-1)(3n-1)\ldots[(b-1)n-1]$ contains one, and only one, term divisible by b.

Since n is a prime number, therefore when

$$n-1,\ 2n-1,\ \ldots,\ (b-1)n-1$$

are ed by b the remainders are all different.

Hence, as there are $b-1$ terms, therefore there are $b-1$ different remainders.

Now when any number is divided by b the possible remainders are b in number, namely, 0, 1, 2, .., $(b-1)$.

But, in our case, $b-1$ is not a possible remainder; for, if $(rn-1)$—the general term of the series $(n-1)(2n-1)\ldots[(b-1)n-1]$—leave $(b-1)$ as remainder when divided by b, then rn would be divisible by b, which is impossible, since n is a prime number and r is less than b.

Hence, in our case, the remainders are 0, 1, 2, ..., $(o-2)$, occurring in some order or other.

Therefore, one, and only one, term of the series

$$(n-1)(2n-1)\ldots[(b-1)n-1]$$

is divisible by b.

We propose next to show that the highest power of any prime number p contained in $(n-1)(2n-1)\ldots[(n-2)n-1]$ is at least equal to the highest power of that prime number contained in $(n-1)!$.

Since, by supposition, p occurs in $(n-1)!$, therefore p is less than n.

Hence, from what we have already proved, it follows that one, and only one, term of the series $(n-1)(2n-1)\ldots[(p-1)n-1]$ is divisible by p.

Let $rn-1$ be that term of the series

$$(n-1)(2n-1)\ldots[(p-1)n-1]$$

which is divisible by p. Then the number of terms divisible by p which occur in the series $(n-1)(2n-1)\ldots[(n-2)n-1]$ may be thus caculated:—

In the first r terms of the series $(n-1)(2n-1)\ldots[(n-2)n-1]$ there is one, and only one, term divisible by p, namely, $rn-1$. In the remaining $n-2-r$ terms there are $I[(n-2-r)/p]$ terms divisible by p, since in every p consecutive terms there is one, and only one, term divisible by p. Hence, the total number of terms divisible by p which occur in the series $(n-1)(2n-1)\ldots[(n-2)n-1]$ is

$$1 + I[(n-2-r)/p].$$

Now, as $rn-1$ is a term of the series

$$(n-1)(2n-1)\ldots[(p-1)n-1],$$

r is never greater than $p-1$. Consequently $I[(n-2-r)/p)]$ is never less than $I\{[n-2-(p-1)]/p\}$, *i.e.*, never less than $I[(n-1-p)/p]$, *i.e.*, never less than $I[(n-1)/p]-1$.

Therefore $1+I[(n-2-r)/p]$ is never less than $I[(n-1)/p]$. That is to say, the number of terms divisible by p which occur in the series $(n-1)(2n-1)\ldots[(n-2)n-1]$ is never less than $I[(n-1)/p]$.

Similarly, the number of terms divisible by p^2 which occur in the same series is never less than $I[(n-1)/p^2]$; and so on.

Hence, the highest power of p contained in

$$(n-1)(2n-1)\ldots[(n-2)n-1]$$

is never less than $I[(n-1)/p]+I[(n-1)/p^2]+\ldots+I[(n-1)/p^s]$ where s is the highest power of p consistent with the condition that p^s is not greater than $n-1$.

But $I[(n-1)/p]+I[(n-1)/p^2]+\ldots+I[(n-1)/p^s]$ is the highest power of p contained in $(n-1)!$. Therefore, the highest power of p contained in $(n-1)(2n-1)\ldots[(n-2)n-1]$ is at least equal to the highest power of p contained in $(n-1)!$. Therefore $(n-1)(2n-1)\ldots[(n-2)n-1]$ is divisible by $(n-1)!$.

We propose to show next that the theorem is true only when n is a prime number. For, suppose n is not a prime number and has A for one of its prime factors. Then, as A is a prime number, and, as none of the terms $n-1$, $2n-1$, ..., $(n-2)n-1$ is divisible by A, the product $(n-1)(2n-1)\ldots[(n-2)n-1]$ is not divisible by A. Hence, clearly, the product is not divisible by $(n-1)!$. [Rest in *Reprint*.]

10761. (Professor Catalan.)—Si a, b, c désignent les côtés d'un triangle rectiligne, démontrer que $a^2b(a-b)+b^2c(b-c)+c^2a(c-a) \equiv 0$.

[$\equiv$ is doubtless a misprint and should be $\geqslant$.—Ed.]

Remark by Professor Sanjána, M.A., C. M. Ross, *and others.*

It would seem there is some defect in the enunciation. The given expression can be shown to be in general greater than zero. For let

in general $a > b > c$, so that $a-b = x$, $b-c = y$, and x and y are positive. Expressing in terms of c, x, y, we get the expression

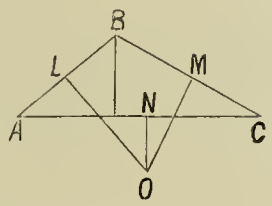
$$= (c+x+y)^2(c+y)x + (c+y)^2cy - c^2(c+x+y)(x+y)$$
$$= (c+x+y)x(2cy+y^2+xc+xy) + cy(2cy+y^2-cx-cy)$$
$$= c^2xy + cx^2y + cxy^2 + x(c+x+y)(y+x)(y+c) + c^2y^2 + cy^3 - c^2xy$$
$$= cy(x^2+xy+y^2+cy) + x(c+x+y)(y+x)(y+c);$$

every symbol is positive and all the signs are *plus*.

The left-hand obviously vanishes when $a = b = c$.

16165. (Professor R. W. Genese, M.A.)—A force acts at each vertex of a rigid polygon at right angles and proportional to the join of the adjacent vertices. Then (1) the system balances; (2) if each force retain its original direction, but the polygon be turned through an angle θ, the system is equivalent to a couple whose moment varies as $\sin\theta$.

Solution by M. T. Naraniengar, M.A.



(1) Let A, B, C be three consecutive vertices: then the force along the perpendicular on AC proportional to AC is equivalent to forces at B perpendicular to AB and BC, and proportional to AB, AC respectively. Similarly with each force. Hence the given system reduces to forces at the extremities of each side perpendicular to the side and proportional to it. These are again equivalent to forces at the mid-points of the sides perpendicular and proportional to the sides. Now, if L, M, N be the mid-points of AB, BC, AC, forces at L and M perpendicular to AB, BC and proportional to them have for resultant a force at N along NO proportional to AC (by triangle of forces). Thus, forces at the mid-points of AB, BC, CD will be equivalent to a similar force at the mid-point of AD, and so on. Hence the resultant of all but one will be equal and opposite to the last, and therefore the system balances.

(2) Next, a force λ AB at the mid-point of AB, when turned through the angle θ may be resolved into (λ AB $\cos\theta$) and (λ AB $\sin\theta$) perpendicular to AB and along AB respectively. By the first part all such components as λ AB $\cos\theta$ balance, and the latter are equivalent to a couple whose moment is $\lambda\Delta\sin\theta$, where Δ is the area of the polygon. Hence, &c.

16155. (Professor Nanson. Suggested by Question 16014.)—Find the locus of the foci of a conic of given eccentricity described about a given triangle.

Solution by the Hon. G. R. Dick, M.A.

Denoting the given eccentricity by e, let ρ, σ, τ be the distances of a focus from the three points A, B, C; then the perpendiculars from A, B, C to the corresponding directrix are ρ/e, σ/e, and τ/e respectively. Now, if α, β, γ denote the perpendiculars from the vertices of a triangle ABC on any straight line whatever, we have the well known relation

$$a^2\alpha^2 + b^2\beta^2 + c^2\gamma^2 - 2bc\cos A\beta\gamma - 2ca\cos B\gamma\alpha - 2ab\cos C\alpha\beta = 4\Delta^2,$$

a, b, c, Δ denoting the sides and area of ABC.

Substituting ρ/e, ..., for α, β, γ, we get

$$a^2\rho^2 + b^2\sigma^2 + c^2\tau^2 - 2bc\cos A\sigma\tau - 2ca\cos B\tau\rho - 2ab\cos C\rho\sigma = 4e^2\Delta^2.$$

This, then, is the equation of the locus. If x_1, y_1, ... are the coordinates of the vertices, $\rho^2 = (x-x_1)^2 + (y-y_1)^2$, ..., replacing ρ^2, ... by $(x-x_1)^2 + (y-y_1)^2$ and rationalizing, the locus is found to be a sextic. The terms of the seventh and eighth degrees are easily shown to vanish, and when $e = 1$ the sixth powers disappear. This is, of course, in accordance with the results obtained by Professor Hudson in *The Educational Times* for December, 1906, which show that in the case of a parabola the locus is an *unicursal quintic*. It has three asymptotes parallel to the sides of the triangle, cutting each side at a distance of one-fourth from the nearest angular point.

The equation

$$a^2\rho^2 + b^2\sigma^2 + c^2\tau^2 - 2bc\cos A\sigma\tau - 2ca\cos B\tau\rho - 2ab\cos C\rho\sigma = 4\Delta^2$$

(in the case of a parabola) is convenient for obtaining the Cartesian (or polar) equation in special cases, such as when the given points form an equilateral triangle, for instance.

The Proposer's Solution is the following:—

From the focus and directrix definition of a conic and from the well known relation connecting the distances of a straight line from the vertices of a triangle, it follows at once that the equation of the required locus is

$$a^2(x-y)(x-z) + b^2(y-z)(y-x) + c^2(z-x)(z-y) = 4e^2\Delta^2,$$

where x, y, z are the distances of a focus from the vertices, e is the eccentricity, a, b, c are the sides, and Δ is the area of the triangle.

9186. (F. Morley, B.A.)—Solve the equations

$$(y-z)(y^2-z^2) = a, \quad (z-x)(z^2-x^2) = b, \quad (x-y)(x^2-y^2) = c.$$

[Solutions too numerous to allow of all being published.—Ed.]

Purely Algebraical Solutions (I.) *by* S. T. Shovelton, M.A.; (II.) *by* D. Biddle.

(I.) Write $2x = u+v$, $2y = u-v$, $2z = u+v+2\theta$.

Then $\quad uv^2 = c, \quad \theta^2(u+v+\theta) = b, \quad (u+\theta)(v+\theta)^2 = a;$

therefore $\quad \theta^2v + \theta(2uv+v^2) = a-b-c;$

i.e., $\quad \theta v(\theta+v+2u) = a-b-c \quad$ or $\quad \theta v(b/\theta^2 + c/v^2) = a-b-c;$

therefore v/θ is a root of the equation

$$b\xi^2 - (a-b-c)\xi + c = 0;$$

whence the values of u, v, θ may readily be found.

(II.) Let $y = x+\lambda$, $z = x+\lambda+\mu$; then

$$\mu^2(2x+2\lambda+\mu) = a, \quad (\lambda+\mu)^2(2x+\lambda+\mu) = b, \quad \lambda^2(2x+\lambda) = c;$$

whence $\quad (3\lambda+\mu+4x)\lambda\mu = b-c-a.$

But $\quad 3\lambda+\mu+4x = c/\lambda^2 + a/\mu^2;$

therefore $\quad c\mu/\lambda + a\lambda/\mu = b-c-a;$

and $\mu = 1/2c\,[(a^2+b^2+c^2-2ab-2ac-2bc)^{\frac{1}{2}} - (a-b+c)]\,\lambda = f\lambda$, say,

where f is found. Now we have

$$x = (c-\lambda^3)/(2\lambda^2) = (a-\mu^3-2\lambda\mu^2)/(2\mu^2),$$

whence $\quad a\lambda^2 - c\mu^2 = \lambda^3\mu^2 + \lambda^2\mu^3.$

Substituting $f\lambda$ for μ, we obtain

$$a - cf^2 = (f^2+f^3)\lambda^3;$$

therefore $\lambda = [(a-cf^2)/(f^2+f^3)]^{\frac{1}{3}}, \quad \mu = f[(a-cf^2)/(f^2+f^3)]^{\frac{1}{3}}.$

Also $x = (c-\lambda^3)/(2\lambda^2) = \{c - [(a-cf^2)/(f^2+f^3)]\}/\{2[(a-cf^2)/(f^2+f^3)]^{\frac{2}{3}}\},$

$$y = x + [(a-cf^2)/(f^2+f^3)]^{\frac{1}{3}}, \quad z = x + (1+f)[(a-cf^2)/(f^2+f^3)]^{\frac{1}{3}}.$$

Solution by aid of Analytical Geometry by T. Stuart, M.A., D.Sc.

We have evidently

$$\Sigma[a/(y-z)] = 0, \quad \Sigma[a/(y^2-z^2)] = 0;$$

that is $\quad \Sigma ax^2 + \Sigma(a-b-c)yz = 0 \quad \ldots\ldots(1),$

and $\quad \Sigma ax^4 + \Sigma(a-b-c)y^2z^2 = 0 \quad \ldots\ldots(2).$

Since the discriminants of these equations vanish, they each break up into two factors and give us

$$2ax + y(c-a-b\pm\alpha_0) + z(b-c-a\mp\alpha_0) = 0 \quad \ldots\ldots(3),$$
$$2ax^2 + y^2(c-a-b\pm\alpha_0) + z(b-c-a\mp\alpha_0) = 0 \quad \ldots\ldots(4),$$

where $\alpha_0^2 \equiv \Sigma a^2 - 2\Sigma bc$.

If we take the upper sign in both, we see that one of the lines represented by (3) touches at the point (1, 1, 1) one of the conics represented by (4), and the same is true if the lower signs in both are taken. If unlike signs are taken, the intersections are distinct (unless α_0 vanishes). Hence in addition to the solution (1, 1, 1) there are two solutions of the equations (3), (4), and consequently six solutions of the original equations. The explicit values of x, y, z in terms of a, b, c are at once deducible.

16167. (W. J. Greenstreet, M.A.)—Solve

$$(y^3+2xy^2)y' + (x+y)(xy'-y) = 2y^3.$$

Solution by Dr. T. Stuart.

This equation is only a particular case of the more general differential equation of the first order,

$$Ly' + M(xy'-y) = N \quad \ldots\ldots(\alpha),$$

where L, M, N are homogeneous functions of x and y. This equation can easily be solved when L and N are of the same degree (as in the Question proposed) by means of the substitution $y = vx$. Writing

$$L = x^n\theta(y/x) = x^n\theta(v), \quad M = \ldots = x^m\phi(v), \quad N = \ldots = x^n\psi(v),$$

n being the degree of L, N, and m that of M, and making the above substitution, (α) becomes

$$(v\theta-\psi)(dx/dv) + x^r\phi + x\theta = 0,$$

where $r = m+2-n$; that is,

$$\frac{d}{dv}(x^{-(r-1)}) + x^{-(r-1)}\frac{(r-1)\theta}{\psi-v\theta} = \frac{-(r-1)\phi}{\psi-v\theta},$$

the general solution of which is

$$x^{-(r-1)}e^{(r-1)\int\frac{\theta dv}{\psi-v\theta}} = C - (r-1)\int\frac{\phi}{\psi-v\theta}e^{(r-1)\int\frac{\theta dv}{\psi-v\theta}}dv,$$

and the primitive will be given by the substitution of y/x for v after the integration has been performed.

In the Question proposed for solution,

$$\theta = v^3+2v^2, \quad \phi = 1+v, \quad \psi = 2v^3, \quad r = 0$$

$$\int\frac{\theta dv}{\psi-v\theta} = -\int\left(\frac{dv}{v} + \frac{2dv}{v^2}\right) = +\frac{2}{v} - \log v.$$

and we have $$xve^{-2v} = C - \int (1/v^2 + 1/v^3)\, e^{-2v}\, dv$$
$$= C - \tfrac{1}{4}(3 + 2/v)\, e^{-2v}.$$
Hence the primitive of (1) is
$$2x + 3y + 4y^2 = C_0 y e^{(2x)/y},$$
where C_0 is an arbitrary constant.

Note.—This substitution can also be successfully employed even when L and N are not homogeneous, provided they can be made so by a linear substitution performed on either x or y, or on both. Thus, for example, the equation (2), when
$$L = \alpha x + \beta y + \gamma, \quad M = Ax + By, \quad N = \alpha' x + \beta' y + \gamma',$$
is reduced to the soluble form
$$L_1 y'_1 + M_1 (x_1 y'_1 - y_1) = N_1,$$
where L_1, M_1, N_1 are all homogeneous of the first degree in x_1, y_1 by the substitution $x = x_1 + h$, $y = y_1 + k$, if we choose h and k to satisfy the equations
$$Ah^2 + Bhk + \alpha h + \beta k + \gamma = 0, \quad Ahk + Bk^2 + \alpha' h + \beta' k + \gamma' = 0.$$
Similarly, the solutions of the equations (Forsyth, *Differential Equations*, Vol. I., pp. 40, 41)
$$(a + y + bx + nx^2)\, y' = y(c + nx), \quad [x(x+y) + a^2]\, y' = y(x+y) + b^2$$
are more easily obtainable by this means than by any other.

16012. (Professor Neuberg.)—Une droite quelconque menée par le pôle O rencontre deux courbes S, S′ aux points M, M′. Les tangentes en ces points rencontrent la perpendiculaire élevée en O sur OM aux points T, T′. Quelle relation faut il établir entre les courbes pour que le conjugué harmonique de O par rapport aux points T, T′ décrive (1) une circonférence de centre O, (2) une droite donnée?

Solution by J. Hodgkinson *and* C. M. Ross.

Using the notation given by Edwards, *Diff. Calc.*, page 157, the polar equation of the tangent to the first curve is
$$u = U_1 \cos(\theta - \alpha) + U_1' \sin(\theta - \alpha),$$
where α is the vectorial angle of the point of contact. Then the vectorial angle of $T = \alpha + \frac{1}{2}\pi$; therefore $u = U_1'$; *i.e.*, the co-ordinates of T are $(U_1', \alpha + \frac{1}{2}\pi)$, and of T′ are $(U_2', \alpha + \frac{1}{2}\pi)$, α being the same for both points. Then the harmonic conjugate of O with respect to T, T′ is $[\frac{1}{2}(U_1' + U_2'), \alpha + \frac{1}{2}\pi]$.

(1) If the locus of this point is a circle of centre O and radius a, then $\frac{1}{2}(U_1' + U_2') = 1/a$, say; *i.e.*, for any points on the two curves $du_1/d\theta + du_2/d\theta = 2/a$. Integrating, $a(u_1 + u_2) = 2(\theta + \beta)$, where β is an arbitrary constant.

(2) If the locus of this point is a straight line, choose the initial line parallel to this line so that its equation is $up = \sin\theta$. Proceeding as before, we get $$p(u_1 + u_2) = 2(\cos\beta - \cos\theta).$$

Note on Factorization by means of Roots.

By Robt. W. D. Christie.

The equations are all modular—

(1) **209.**— $N = 9^2 + 2.8^2 = 0 \pmod{p}$, say,
$= 2^2 + 2.8^2 = 0 \pmod{11}$, since 2, 8 are roots of 11.

Again, $N = 3^2 + 2.10^2 = 0 \pmod{19}$, since 2, 3, 10 are roots of 19. The factors 11 and 19 are thus indicated.

(2) **1121.**—
$N = 31^2 + 10.4^2 = 31^2 + 10.15^2 = 11^2 + 10.10^2$, indicating 59.19.

(3) **80201.**— $N = 79^2 + 10.86^2 = 10^2 + 10.17^2$, indicating 23.
The other factor
$N = 3487 = 48^2 + 7.13^2 = 4^2 + 7.2^2 = 7^2 + 7.2^2$, indicating 11
or $2^4 + 7.2^2$, indicating 11,
since $r^4 + r_1.r^2 = 0 \pmod{p_{4m-1}}$.

(4)—Again, since $r^2 + r^{2m+1} = 0 \pmod{4m-1}$,
we have
$r^4 + r_1 r^2 = 0$ where $r_1 = r^{2m+1}$ ..... (1),
$r^4 + r.r_1^2 = 0$ where $r_1 = r^{m+1}$ ..... (2),
$r_1^2 + r.r^2 = 0$ where $r_1 = r^{m+1}$ ... . (3),
$r^2 + r.r_1^2 = 0$ where $r_1 = r^m$ ..... (4).

Again, if $r^2 + r.r_1^2 = 0$,
then $s^2 + s.s_1^2 = 0$ where $rs = 1 = r_1 s_1$ ....(5),
associated roots, and $s_1^2 + r.s^2 = 0$ from (3) .... (6).
Similarly $r_1^2 + r_2.r_2^2 = 0$ where $r_1 = r^{3m-3}$ and $r_2 = r^{4m-3}$ ..... (7);
and many others.

16163. (Professor Cochez.)—On donne trois cercles co-axiaux. Lieu de P tel que les tangentes PA, PB et PC à ces cercles (A, B, C étant les points de contact) vérifient la relation $(PA.PB)/PC^2 = K$.

Solution by Henry Riddell, M.E.

If we have three circles coaxial, then the squares on tangents to two of them from a point on the third arc in the ratio of the distances of the centre of the third from the other two centres.

Now, if there are four coaxial circles with centres R, S, T, U, and tangents are drawn from the point P on the circle U to the points A, B, C on the circles R, S, T, we have
$$PA^2/PC^2 = UR/UT \quad \text{and} \quad PB^2/PC^2 = US/UT;$$
therefore $$(PA^2/PC^2)(PB^2/PC^2) = (UR.US)/UT^2$$
or $$(PA.PB)/PC^2 = [\sqrt{(UR.US)}]/UT.$$
Therefore it is evident that a fourth coaxial circle forms the required locus.

QUESTIONS FOR SOLUTION.

16201. (C. W. O'Hara, B.Sc.)—In the motion of a rigid body about a fixed point under the action of no forces prove that
$$R\cos\theta + Mr\omega^2 \sin^2\phi = 0,$$
where R is the reaction at the fixed point, M is the mass of the body, r the distance of its centroid from the fixed point, ω its angular velocity, θ the angle between the reaction and the radius vector to the centroid, and ϕ the angle between the angular velocity and the radius vector to the centroid.

16202. (S. C. Bagchi, B.A., LL.B.)—Find the shadow, due to a point source of light, of the curve $x = f_1(\lambda)$, $y = f_2(\lambda)$, $z = f_3(\lambda)$, on the surface $x = \phi_1(\mu, \nu)$, $y = \phi_2(\mu, \nu)$, $z = \phi_3(\mu, \nu)$, the functions being all algebraic. Hence show that the shadow of a straight wire on a sphere is a part of a small circle given by $x = f_1.\phi$, $y = f_2.\phi$, $z = f_3.\phi$, where f_1, f_2, f_3 are linear functions of a single variable determining the wire, and ϕ is of the form $(L + 2\sqrt{M})/N$; L, M, N being quadratic functions of the same parameter.

16203. (R. F. Scott, M.A.)—Find a solution o the system of n equations
$$x_1 - a_1 = x_2 - a_2 = \ldots = x_n - a_n,$$
$$\begin{vmatrix} x_1, & x_2, & \ldots, & x_n \\ x_n, & x_1, & \ldots, & x_{n-1} \\ \ldots & \ldots & & \ldots \\ x_2, & x_3, & \ldots, & x_1 \end{vmatrix} = 0.$$

16204. (*Communicated by* T. N. Haun, A.B.)—A cube being cut at random by a plane, what is the chance that the section is a hexagon? (Problem 72, p. 503, Williamson's *Integral Calc.*)

16205. (Lt.-Col. Allan Cunningham, R.E.)—Given that $N = x^x$ has 38907 figures, x being an integer, find its first three and last three figures.

16206. (T. Stuart, M.A., D.Sc.)—The number 10091401 has been proved prime by both Euler and Legendre, but only after tedious calculations. Obtain the same result by calculations not requiring more than an hour's work.

16207. (Professor Sanjána, M.A.)—If the roots of $x^2 - p(x+1) - c = 0$ be α and β, prove that
$$\frac{\alpha^{2n} + 2\alpha^n + 1}{\alpha^{2n} + 2\alpha^n - f(p, c)} + \frac{\beta^{2n} + 2\beta^n + 1}{\beta^{2n} + 2\beta^n - f(p, c)} = 1,$$
where $f(p, c)$ is the following function of p and c:—
$$p^n + n/1!\, p^{n-2}(p + c) + [n(n-3)]/2!\, p^{n-4}(p + c)^2 + \ldots + (-1)^n (p + c)^n.$$

16208. (Professor Nanson.)—If
$a^n + b^n + c^n = 0$, $a^{n-1}x + b^{n-1}y + c^{n-1}z = 0$, $x^n + y^n + z^n = 0$, and $abc \neq 0$, then either x/a, y/b, z/c are all equal or the sum of their homogeneous products of $n-2$ dimensions is zero.

16209. (J. J. Barniville, B.A., I.C.S.)—Prove that
$$\frac{1}{1.3} + \frac{1.2}{3.7} + \frac{3.2^2}{7.17} + \frac{7.2^3}{17.41} + \ldots = 1;$$
$$\frac{1}{1.3} + \frac{2.2}{3.8} + \frac{5.2^2}{8.21} + \frac{13.2^3}{21.55} + \ldots = 1.$$

16210. (A. M. Nesbitt, M.A.)—Prove from first principles that the locus of a point whence a straight line can be drawn to intersect $(x - \alpha_r)/l_r = (y - \beta_r)/m_r = (z - \gamma_r)/n$ $(r = 1, 2, 3)$ is $|P_1, Q_2, R_3| = 0$, where P_k, Q_k, R_k are the co-factors of p_k, q_k, r_k in the determinant
$$\begin{vmatrix} p_k, & q_k, & r_k \\ l_k, & m_k, & n_k \\ x - \alpha_k, & y - \beta_k, & z - \gamma_k \end{vmatrix}.$$
[Note that the locus is a quadric and that the three given lines are obviously generators.]

16211. (Professor Neuberg.)—On projette un point quelconque du paraboloïde $z = ax^2 + by^2$ sur les trois axes coordonnés. Trouver l'enveloppe du plan qui passe par les trois projections.

16212. (W. J. Greenstreet, M.A.)—Find the locus of the feet of the perpendiculars from the origin to the normals to Bernoulli's Lemniscate.

16213. (R. N. Apte.)—The normals at P, Q of a parabola are at right angles, and from their point of intersection the third normal is drawn and meets the curve in R. Find the least distance of the centroid of the triangle PQR from the vertex. Also find the least distance from the vertex of the centroid of the triangle formed by tangents at P, Q, R.

16214. (V. Ramaswami Aiyar, M.A.)—Given a triangle ABC, if a conic having one focus at A has the other focus in the side BC and passes through the circum-centre: prove that its auxiliary circle touches the nine-point circle of the triangle.

16215. (H. Bateman, B.A.)—With a point Q on the circum-circle of a triangle ABC as centre, two conics are described, one to touch the sides of the triangle, the other to pass through the angular points. Prove that they are similar.

16216. (W. F. Beard, M.A.)—Two similar ellipses with their axes parallel are cut by any straight line in A, B, A′, B′; a point O is taken in AD such that $OA.OB = OA'.OB'$. Prove that the locus of O is a straight line.

16217. (C. E. Youngman, M.A.)—Let I be the centre and r the radius of one of the circles which touch the sides of ABC, and ρ, ρ' the radii of those two others which subtend at a particular vertex A an angle supplementary to that subtended by I. Prove that

$$AI^2 = (r+\rho)(r+\rho');$$

the in-radius being counted negative.

16218. (Professor Lauvernay.)—Construire un triangle, connaissant les rapports a/b, b/c et la somme $m_a + m_b + m_c$ des médianes.

OLD QUESTIONS AS YET UNSOLVED (IN OUR COLUMNS).

9605. (H. L. Orchard, M.A., B.Sc.)—If the report of a gun fired at a distance of 1 mile is heard 5 seconds after the flash is seen through an atmosphere at temperature 35° C., find the (average) atmospheric density.

10869. (Professor Sylvester.)—m and $(\tan m\pi)^2$ are both to be rational and the former a proper positive fraction. Show that m can only have one or other of the values $\frac{1}{6}, \frac{1}{4}, \frac{1}{3}, \frac{1}{2}, \frac{2}{3}, \frac{3}{4}, \frac{5}{6}$.

10906. (Elizabeth Blackwood.)—Given that x, y, z are each between the limits 1 and -1, and that $3x+2y+z$, $2x+y+3z$, $x+3y+2z$ are each between the limits 3 and -3, required all the limits of x, y, z.

10940. (A. Martin, LL.D.)—A catenary is revolved about its axis. If the solid thus formed be cut by a plane making a given angle with its axis, find the equation to the curve bounding the section.

11110. (R. W. D. Christie.)—Find, by means of the quintic roots of minus unity, all the values in succession of X and Y in the equation $X^2 - 5Y^2 = \pm 4$, and give the values of X and Y respectively.

11116. (Rev. H. Sewell, M.A.)—Show that the $(3n)$-th convergent to $\frac{1}{2}[2+(10)^{\frac{1}{2}}]$ may be obtained by adding unity to the n-th convergent to $(10)^{\frac{1}{2}}$. Also generalize the result.

NOTICE TO CORRESPONDENTS.

It is requested that all Mathematical communications should be sent to the Mathematical Editor,

Miss Constance I. Marks, B.A., 10 Matheson Road, West Kensington, W.

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Thursday, April 11th, 1907.—Sir W. D. Niven, Vice-President, in the chair.

Mr. W. M. Page was elected a member.

Mr. G. S. Le Beau was admitted into the Society.

The following papers were communicated:—

"An Introduction to the Metrical Geometry of Space of n Dimensions," by Mr. H. Bateman.

"Note on Perott's Theorem," by Mr. H. Hilton.

Informal communications were made as follows:—

"On Poisson's Integral and its relation to the Proof of Fourier's Theorem," by Dr. E. W. Hobson.

"On the Values of the Parameters for which a Definite Integral can be Zero," by Mr. H. Bateman.

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AND

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COLLEGE OF PRECEPTORS.—
EXAMINATIONS, 1907.

1. DIPLOMAS.—The next Examination of Teachers for the Diplomas of the College will commence on the **26th of August.**

2. PRACTICAL EXAMINATION FOR CERTIFICATES OF ABILITY TO TEACH. — The next Practical Examination will be held in **October,** 1907.

3. CERTIFICATE EXAMINATIONS. — The Christmas Examination for Certificates will commence on the 3rd of December.

4. LOWER FORMS EXAMINATIONS. — The Christmas Examination will commence on the 3rd of December.

5. PROFESSIONAL PRELIMINARY EXAMINATIONS.—These Examinations are held in March and September. The Autumn Examination in 1907 will commence on the 3rd of September.

6. INSPECTION AND EXAMINATION OF SCHOOLS.—Inspectors and Examiners are appointed by the College for the Inspection and Examination of Public and Private Schools.

PRIZES.

Diploma Examination.—The following Prizes will be offered for competition:—Theory and Practice of Education, £10; Classics (Greek and Latin), £5; Mathematics, £5; Natural Science, £5. The Doreck Scholarship of £20 will be awarded on the results of the Christmas Examination.

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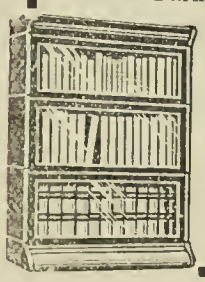

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The Educational Times.

Empire and Education.

Are we, then, really beginning to think Imperially in education? Surely there should be no question about it when representative Ministers and educational officers from all the scattered territories of the Empire have assembled at Westminster to discuss educational affairs in a ten days' Conference. We have to write, under the pressure of publication day, before the Conference has settled down to its practical programme. But we learn, and from what we have seen we can well believe it, that there are several hundred delegates in attendance, including eight Ministers and officials from Canada, eight from India, six from Australia, one from each of the South African colonies, and one "from each of the other countries of the Empire." The individual names of the delegates from abroad indicate that the outlying members of the Empire have sent their best. The home representatives that have come to take counsel with them—representatives of universities and colleges, of associations of teachers in every grade, and of educational workers of every class—can speak with authority on every aspect of education in the old country, and are eager enough to learn as well as to teach. The Lord President of the Council very properly inaugurated the sessions in person. The circumstances appear to be thoroughly auspicious, and hopes are high. Happily the ambiguities in the name have not marred this truly Imperial effort of the League of the Empire: there can be little danger of Jingoism in the propagation of educational knowledge and zeal; on the contrary, the spread of education should tend to control the spirit of unreasoning or selfish aggression. The omens are undoubtedly good.

The growth of the idea is characteristic of British ways. It was not the Government, but a voluntary society—the League of the Empire—that took the initiative, and gradually worked out practical schemes of realization, eventually engaging the interest of the Government and the sympathy of the educational public. It is now four years, we learn from the official journal of the League, since "the principle of reciprocal education was put forward by the League and won the favourable commendations of the Colonial Office and the co-operation of the colonial Education Authorities." For some time "simple schemes between schools only were attempted, including the exchange of such work as in any case formed a part of school curriculum"; but there resulted an exchange of "a vast amount of general information, both between teachers and pupils," a quickening of personal interest, and a demand for larger opportunity. Then "sections of school work from different parts of the Empire were supplied to schools for use at school exhibitions and prize-givings," with a further extension of Imperial interest. Among steps that followed are mentioned the provision of lecturers and special literature, the project of temporarily exchanging teachers and inspectors between the different countries, and a scheme for the compilation and adoption of Imperial text-books. In such ways the League put itself in touch with the whole Empire, and established an extensive organization. "Federation in education became a possibility." The questions that now emerged "could only be dealt with by the education authorities themselves in council, and the Conference of representatives appointed by the Departments became, therefore, of real educational and Imperial import." And now the Conference is in full swing.

The originality of the project seems to lie in the particular application of principles already in operation elsewhere. Not to go far afield, we have had Mr. Mosely's expeditions of educational discovery to America; the interchange of visits between London and Paris educationists; the interchange of professors between Harvard and Berlin; the interchange of vacation courses between Great Britain and the Continent; Mr. Stead's international correspondence of school-children; and so forth. But the originality of the application to the whole Empire over the whole educational field is honour enough for an ambition of public utility. It has been said that, by visiting any well equipped educational library, educationists may readily find as much information about countries other than their own as they are likely to put to practical use. There is the great series of official volumes that Prof. Sadler was not permitted to complete; there are well known official publications all the world over; there is an active educational press in all countries worth educational consideration; there is everywhere a constant and enormous flood of educational works

from the offices of the publishers. It may be that patriotism is not specifically enjoined in such works; and it may be that patriotism is firmly enough implanted in the British mind not to require any specific injunction. But, when all is said, there remains the immense effect of a common participation in a critical survey of the field as a whole and in the interrelation of parts, and particularly of the personal intercourse of the minds that direct and supervise. The open meetings of the Conference will have illustrated the treatment of particular large subjects, much as any current educational journal might do; but we are entitled to hope for a definite outcome of fresh ideas and projects from the Official Conference of Representatives, perhaps modified and strengthened by the Full Conferences of Representatives and Delegates. On the face of them, some of the proposals—such as the interchange of teachers and inspectors—are open to obvious criticisms: but these had better be deferred; for it often happens that a theoretical difficulty "solvitur ambulando." In the meantime we are more concerned for a large outlook, for a common enthusiasm, and for a political concentration on fundamental questions. The details must be left free for local treatment in accordance with local needs and local ideas. There must be full scope for the development of individual genius in fresh experiment. The general machinery must not cramp, but facilitate and inspire, individual effort. Each community, each province, each district, must work out its own educational problems, but we can all encourage each other by giving a friendly hand. The present Conference marks a stage of fresh outlook and aspiration; the next, we trust, will report practical results of value, and, among the rest, not only a vivid and enlightened patriotism but a marked advance in the conception, co-ordination, and efficiency of the educational systems of the Empire.

NOTES.

The President of the Board of Education took the opportunity of a resolution submitted in the House by a private member (May 15) to state the conditions he proposes to attach to the distribution of the additional funds placed at his disposal by the Chancellor of the Exchequer. The new money is to be given only to such schools as accept the following new conditions:—

(1) There must be a majority of representative managers in the government of the school;

(2) The instrument under which the school is governed must not require any member of the teaching staff to belong, or not to belong, to any particular denomination; and

(3) That instrument must not require a majority of the governing body to belong, or not to belong, to any particular denomination.

The schools that are not able to accept these conditions will receive "the old grants and nothing more." If Mr. M'Kenna's speech be read in the light of the controversy on Mr. Birrell's Bill and of the prevailing views of the Parliamentary majority, he may be regarded as impliedly taking credit for allowing them even so much; but he has stayed his hand because he recognizes that, "if they took away the grants from schools which refused to submit to popular control, the result in many cases would be to close them." There is warning, however, both in the statement and in the action of the President. Sir Philip Magnus was very probably right when he said that he did not think the religious difficulty existed to any serious extent in secondary schools; and, if so, the schools temporarily excluded from the new grants may soon find ways of conforming to the President's conditions. A conscience clause for the training colleges is to be put in the Regulations, but it will not come into operation till next year.

The statistics cited by Mr. M'Kenna may suffice to show that "the position is not quite so black as it has been painted"; but that is not greatly reassuring. If it is "nothing like what he would like to see," however, he may be expected to take steps to secure more satisfactory results. Mr. Adkins spoke of "the prevalent want of sympathy with higher education among the English people," and Mr. Shackleton admitted that the demand for higher education on the part of the working classes is not so urgent as it should be. Both are no doubt right; and the reasons are not at all obscure. The elimination of sectarian conflict and the establishment of local control, in the case of institutions assisted by public funds, would naturally tend to some increase of popular interest. But Mr. M'Kenna, we take it, has no need to trouble himself, even from the miserable party point of view of future votes, about the degree of popular zeal for improved education. The lead is in the hands of the educationists, and, if he put himself at their head, he will not lack a substantial following, regardless of political colour. The English people have a remarkable faculty of response to a great call. The time is ripe for a worthy constructive effort. The duty of the State, in the interests of the nation, is amply recognized; what is lacking is the statesman that shall realize that duty in a thoroughly national reorganization of the system. It is difficult, indeed, to rise above the traditional habit of fitful mending and patching, in spite of the odd appearance and the creaking inefficiency and deplorable waste of the antiquated machinery. It is difficult also to lift the parliamentary eye from the existing village pump to the future of the Empire. But, at any rate, here is Mr. M'Kenna's great opportunity. What will he do with it?

The Oxford appeal for a quarter of a million must be regarded as modest in view of Oxford needs as well as in comparison with Cambridge. The money ought to be forthcoming, and no doubt it will be found; and no doubt, moreover, Oxford will cry for more. There are many indications, however, within as well as without the University, that there must be an inquiry—a third Commission—to see how the old system is working in the new circumstances and to decide whether it may not profitably be adjusted with more accuracy to the demands of the modern age. The essays of "Some Oxford Tutors" in the *Times* point in this direction no less decisively than the criticisms of independent outside reformers. There seems to be considerable scope for more fruitful application of the existing University funds. Are there not otiose professorships, reduplicated teaching machinery, practical waste of scholar-

ship money, much unnecessary yet practically compulsory expenditure? The University needs to be emancipated from the colleges as well as from the public schools: it needs to assume its rightful position of command and to subordinate all other interests to the efficient discharge of the essential functions of a university. It will take no harm from closer contact with the mass of the nation. The industrious poor will probably do it no less credit than the idle rich; indeed, there is abundant precedent on this point, and it is uniformly reassuring. The best friends of Oxford would prefer a Commission without a quarter of a million to a quarter of a million without a Commission. The University, in fact, sorely needs both the one and other. Unfortunately, however, the Government does not see its way to move in the meantime.

If you accept the benefactions of the wealthy, you bind yourself to acknowledge handsomely their generosity; and it is an ill-bred dog that snaps at the hand that feeds him. Yet there were in Lord Rosebery's audience at London University on Presentation Day not a few that winced under his apologetic laudation of certain South African millionaires, in spite of their benefactions to the higher education in London. "These benefactions," he said, "can only come out of the superfluity of wealth, and, if you cut short the persons possessed of that superfluity, you are killing the bird that lays the golden eggs." It was judicious "not to lower the bird by a descriptive denomination"; it was scarcely adroit to suggest the connotation of the name. Happily nobody, so far as we are aware, wants to "cut short" the possessors of the engaging superfluity. We do not care to consider the "justice of the criticisms which have been passed on those fortunes or on their application," but it is credibly related that there have been institutions that refused, on grounds much less cogent than the "criticisms" passed on the benevolent millionaires of South Africa, to relieve a poor millionaire of a proffered part of his superfluity. True, such benefactions "can only come out of the superfluity of wealth," but the benefactions that have built up most of our universities have come largely from the self-denials of comparative poverty. After all, what is a matter of a few hundred thousands to the possessor of millions? It is so easy, as somebody has said, for a millionaire to achieve immortality. As the benefaction so the benediction. The widow's mite is at a discount in modern university finance.

A fresh danger to the Empire has been unveiled. It has been discovered, of all places in the world, in Yorkshire; it arises, of all possible sources, from education. At the quarterly meeting of the East Riding County Council (May 6) the report of the Education Committee revealed a considerable increase in the cost of pupil-teachers: a few years back the annual figure was £623; last year it was £2,122; the estimate for the current year was £2,567. We do not stop to draw our own inferences from these significant figures. The increases of salary recommended made another frightful total of £340. Said one Councillor: "The salaries are continually advancing; it is time we called a pause." Said another Councillor: "I protest against these advances to teachers; as a rule, teachers are the best-off people in their neighbourhood." "Why shouldn't they be?" interjected a bold Alderman. And this brought the interrupted Councillor to the point. We quote from the *Yorkshire Herald* (May 7):

> Councillor Moate: Why should they be? Come, friend, we don't expect people to be better off than those who pay them. If anybody has to do the gentleman at my expense, I will do it myself. Salaries were continually going up. The National Union of Teachers were trying to dominate the situation. It was time they made a stand; for, if they did not, the teachers would break the Empire.

The Councillor's solicitude does honour to his patriotism. But, if the teachers proceed "to break the Empire," it will be a new *rôle* of remarkable interest. On the whole, we are inclined to chance it. At the same time, there seems to be no good reason why the worthy Councillor should not "do the gentleman" in his own way at his own expense. If, however, he would take a turn as an elementary teacher in one of the Council's schools (say, for a month), the experience would give him fresh views of "doing the gentleman," and would notably improve his critical competence on questions of teachers' work and teachers' salary. Not even a County Councillor, we imagine, would be less efficient for gaining some inkling of the facts of questions that he has to discuss and to decide by his vote, to the weal or to the woe of other people. Meantime, the Empire will probably take care of itself.

SUMMARY OF THE MONTH.

At a meeting of the London County Council an urgency report of the General Purposes Committee stated that the Committee had received a letter addressed to the Chairman of the Council by the Secretary of the Board of Education, asking whether the Council was still prepared to contribute towards the maintenance of the Imperial College, as indicated in the Council's resolutions of July, 1903, when the Council decided to contribute an annual sum of £20,000 towards the maintenance of the college, on condition that land, buildings, and equipment amounting in value to not less than £500,000 were provided. The letter pointed out that under the Charter the Governing Body will consist of forty members, of whom five may be elected by the Council. The Committee accordingly recommended: "That, with a view to their names being inserted in the Charter of the New Imperial College of Science and Technology, and to their acting as representatives of the Council, in the event of such Charter being granted, and subject to such Charter being granted in the terms, so far as they relate to the representation of the Council, of the draft submitted by the Board of Education, the following persons be appointed on the Governing Body of the Imperial College:—Mr. A. A. Allen, M.P., Mr. H. Percy Harris, Sir Clement Kinloch Cooke, Mr. R. A. Robinson, and Mr. John T. Taylor." The recommendation of the Committee was adopted.

An Oxford Workers' Educational Association has been established. At the inauguration meeting Mr. W. Temple, Fellow of Queen's College (son of the late Archbishop of Canterbury), said some of them in the University, knowing what it was founded for, and that the original intention was to secure a wholly gratuitous education to the poor man's son from boyhood upwards, were not altogether satisfied at the present aloofness which seemed to exist between the higher education given in the University and the working classes in England generally, and in Oxford more particularly. They were glad to have any opportunity whatever of removing to some extent the gulf that had arisen between the University and the working classes, a gulf which, could it have been foreseen by the pious founders, might seriously have hindered them in their munificent benefactions. They were doing something—not very much, but it would be more as the years went on—to remedy the great evil that had grown up in this way.

A protest has been circulated by the Committee of the Catholic members of Convocation of the Royal University of

Ireland, signed by Dr. J. C. M'Walter, M.A., chairman, and Charles J. Joyce, M.A., and Edward Magennis, M.D., hon. secretaries, against the action of certain educational bodies in England and Scotland directed against the proposed settlement of the university question. The Committee hold that, the academical test being right, the Irish people must be assumed to be the best judges as to the internal or domestic arrangements. They question the right of Scottish universities to intervene, as no special facilities are given in them to students of Trinity or the Royal. The same argument is applied to the Schools of Medicine, Edinburgh, and to the other colleges protesting.

It will be with some regret (says the *Birmingham Gazette and Express*) that old citizens of Birmingham will learn that the Queen's College, in Paradise Street, is condemned to lose all its individuality and become merely a hostel for students of the University of Birmingham. After the ancient foundation of King Edward's School the college is the oldest educational institution of any standing in the city. It is nearly eighty years since Queen's College was first founded by the famous Dr. Sands Cox as a school of medicine and surgery, and it is considerably more than half a century since the theological department was established by the generosity of the Rev. Samuel Wilson Warneford. The fortunes of the two departments have been strangely divergent. On the one hand the medical college enjoyed such continued prosperity that when, some fourteen years ago, it was absorbed in the Mason Science College—the forerunner of the University of Birmingham—it was one of the most famous medical schools in the country, and its reputation has been sustained to the present day by the Queen's Faculty of Medicine at the new University. The theological department, on the other hand, has never enjoyed an equal measure of popularity among students or an equal standing among institutions of the same character.

The eighth Annual Examination for the National Diploma in Agriculture was held on May 6–9 at Leeds University. 33 (out of 57) candidates passed in Part I. (Agricultural Botany, Mensuration, and Land Surveying or Agricultural Bookkeeping, General Chemistry, Geology, and Agricultural Zoology), and 27 (out of 34) in Part II. (Practical Agriculture, Agricultural Bookkeeping or Mensuration and Land Surveying, Agricultural Chemistry, Agricultural Engineering, and Veterinary Science).

The Council of the Iron and Steel Institute, in submitting (May 10) its report on the work of the research scholars who were candidates for the Carnegie Scholarships, recommended that silver medals be awarded to Mr. E. F. Law, Assoc. R.S.M. (London), and Mr. O. Stutzer, Ph.D. (Freiburg, Saxony); scholarships of the value of £100 each to Mr. C. A. Edwards (Horwich), Mr. J. A. N. Friend (Germany), Mr. D. M. Levy (Bradford), and Mr. A. M. Portevin (France); and scholarships of £50 each to Messrs. A. K. F. Hiorth (Norway) and B. Saklatwalla (India and Germany). The recommendations were adopted.

Teachers' salaries differ remarkably in the elementary schools of Great Britain and Ireland. While the average pay of a head teacher in Scotland is £180 for a man and £115 for a woman, in England the rates are £161 and £110 and in Ireland only £102 and £82 respectively. Similarly, where the Scottish assistants get an average of £150 and £95 the English assistants receive £144 and £88 and the Irish assistants only £73 and £58 respectively. We need not wonder, therefore (says the *Certificate Examiner*), at the migration of Irish teachers to this side of the Channel in increasing numbers.

Some 895 certificated teachers employed in the 208 Catholic schools in Scotland have forwarded to Parliament a petition pointing out that more than 10 per cent. of the total number of pupils in daily attendance at Scottish schools attend schools that have been built and maintained entirely by the Catholic body, who have, since 1872, made to the general public the very considerable saving for buildings and sites of over £1,000,000, and are saving the other ratepayers of the country nearly £30,000 every year. It is stated that this expenditure has been borne by the Catholics without resistance, active or passive, though they have not shared in the education rate levied on all householders, and that therefore their salaries are lower than those in public schools, and they are less able to make provision for the time when their certificates are cancelled. By the Superannuation Act all "existing" and "future" teachers, whether employed by School Boards or other managers, were placed on terms of absolute equality in the matter of pensions and retiring allowances; but Clauses 10, 11, and 12 of the Education Bill, the petitioners contend, completely destroy this equality, as the claims of the teachers in voluntary schools have been entirely overlooked or ignored, and no arrangement has been made whereby they will receive a penny under Clause 12, Sub-Section 2. They say that there is no reason why this unequal arrangement should be proposed, seeing that all teachers do the same work in secular subjects under the Code, and all pay the same yearly pension premium. They therefore suggest verbal amendments, which would have the effect of permitting School Boards to deal with all teachers "employed within their education district." They further suggest that where in any education district the option of adding to teachers' pensions has been exercised it shall be lawful for voluntary-school managers to augment retiring allowances to a similar extent and claim the whole excess from the Treasury; or that the School Board should be constituted the pension authority for all teachers under its option, and in exercising this power should treat public and voluntary school teachers alike, in the latter case allowing all augmentation from the Treasury, and that, subject to these amendments, Clauses 10 and 11 should be made compulsory.

The University for women students in Constantinople, established according to the example of American colleges, is showing a good attendance. One hundred and twenty-two students (says the *Gentlewoman*) have graduated at that University, and more than half of that number are actively engaged in their different professions. The curriculum is based on that of the American universities, so far as Oriental customs will permit. The official language used by the tutors is English, and the teaching staff is composed mostly of American ladies. There are at present 160 students in the college, of whom 80 are boarders and 80 daily attending students. The nationalities are varied: students are drawn from many countries. Greece and Albania send some, so does Asia Minor from the borders of the Tigris and the Euphrates; they also come from Egypt and Spain, from Roumania and Bulgaria, and even from Russia.

No less than 251 out of the 508 Italian Deputies (writes the Rome correspondent of the *Morning Post*) have agreed to support the motion urging the Cabinet to introduce a Bill for raising the salaries of university professors before the end of the present year. The economic situation of the professors is serious; for their salaries were last fixed more than forty years ago, when the cost of living was not what it is now. They find themselves placed on the same scale as a harbour-master or a third-class official in the Government lottery, while by a recent enactment they are in some cases less well paid than the masters in secondary schools. It is better, therefore, to be a schoolmaster with a stipend of £140 a year than a professor extraordinary with only £120, while even a fully fledged professor, aged thirty-five, is not passing rich on £200, with an increase every five years of £20. In Italy, where literature, even when it is fiction, barely pays, a professor of history or literature cannot add much to his salary by his pen; so that only the heads of the faculties of jurisprudence and medicine or engineering can make anything at all considerable by private practice. Hence there is a clear case for the professors, whose modest demands are supported by public opinion.

An Australian correspondent writes: "Queensland has been backward in establishing the coping-stone of its system of public instruction—a university; but this blot is likely to be removed shortly, for the last Australian mail brings news of the sitting at Brisbane of a University Congress, strongly representative of the educational interests of the State. The financial problem has not yet been satisfactorily settled; but when a thoroughly sound working scheme has been beaten out and the sympathy of all portions of the community enlisted no doubt difficulties of this kind will disappear. The system of elementary and advanced State instruction in Queensland is recognized by all educational experts as most excellent; in fact, the success of pupils from that State in competitive competitions all over Australia is evidence of this. In some ways this tardy step of establishing a university in Queensland has its advantages; for it is proposed to have a charter to include affiliated schools of mining at

Charters Towers (one of the principal mining centres in North Queensland), and of agriculture at Gatton."

Dr. Abdul Ghani, who was recently selected by the Ameer of Afghanistan to organize and supervise educational work in that country, has communicated to the Lahore *Observer* details of the steps already taken and of plans for the future. The city of Kabul has been divided into forty school districts, each having a lower primary branch school. Out of these more than twenty upper primary branch schools and five middle schools are to be evolved, and their past students will pass to one or other of the two high schools, and thence, in some cases, to the Habeebiah College, lately formed by order of his Majesty, and constituting the nucleus of a University. The scheme drawn up by Dr. Abdul Ghani and sanctioned by the Ameer also includes the establishment of technical schools for industrial instruction, and a medical school to be opened next month, the text-books for the latter being now in course of translation into Persian. A special course of instruction is being provided for promising young men selected to be sent to Europe or to Japan, at the cost of the State, for the study of Law, Medicine, and other pursuits. Religious instruction is an essential part of the educational scheme, theology being compulsory in the Arts Faculty up to the B.A. standard. English is one of the foreign languages to be taught in the schools; but it is to be an optional subject, and they will not be called "English schools"—"a name," says Dr. Abdul Ghani, "which raises before the ordinary Afghan mind a host of anti-Islamic possibilities." But, in spite of a conciliatory attitude in respect to obscurantist sentiment, the Ameer had to confess to his nobles in open Durbar, when giving Dr. Abdul Ghani his instructions: "I know you are all against me in the work of introducing modern education in Afghanistan. But I have determined and formed a plan, and now I will see who succeeds—I in educating you, or you in resisting my efforts in that work." After three years' experience of the systematic plan of general, primary, and secondary education in Kabul, schools are to be established on similar lines in the large provincial towns.

Dr. John Kells Ingram died in Dublin in his eighty-fourth year. Entering Trinity College at an unusually early age, he became Fellow in 1846, Professor of Oratory and English Literature in 1852, Regius Professor in Greek in 1866, and Vice-Provost in 1898. His "History of Political Economy," originally written for the "Encyclopædia Britannica," has been translated into nine European languages and into Japanese. He was also a poet, the most famous of his poems being "Who fears to speak of '98?" Latterly he declared himself a Positivist.

Dr. Alexander Buchan, LL.D. Glas., F.R.S., died at Edinburgh at the age of seventy-eight. He was a schoolmaster for a dozen years, secretary of the Scottish Meteorological Society 1860–78, and curator of the library of the Royal Society of Edinburgh 1878–1906. He published several volumes and numerous articles on meteorology and other scientific subjects.

Prof. Henry Cullimore, M.A. Oxon., the first holder of the Chair of English Literature in the University of Fribourg, has died at the early age of twenty-eight. His leading studies at Oxford were English and Education, and he gained teaching experience at Aberdare County School. Two years ago he published a volume of poems, and a study of Christina Rossetti in French. He leaves behind him a work on English Metre, the substance of which he recently delivered as a course of lectures at Fribourg.

Dr. Theodor Aufrecht, the great Latinist and Sanskritist, has died at Bonn in his eighty-seventh year. He was a familiar figure at Oxford in 1851–62. In 1849–51 he had published, in collaboration with Kirchhoff, a work on the Umbrian Inscriptions, and, on the suggestion of Max Müller (it is believed), he visited Oxford to catalogue the Sanskrit MSS. in the Bodleian. From 1862 to 1875 he occupied the Chair of Sanskrit and Comparative Philology in Edinburgh, and from 1875 to 1889 the Chair of Sanskrit at Bonn. Since 1889 he had been carrying on his studies in retirement.

UNIVERSITIES AND COLLEGES.

(*From our own Correspondent.*)

Oxford.

What with the installation of the new Chancellor, the appeal for funds, the coming Pageant, and the Eights, Oxford is very much before the public just now. There was a rumour (but Rumour proved a jade once more) that, after all, Lord Curzon would, owing to ill-health, be unable to come on the appointed day. However, the whole ceremony went off very admirably, and, after a spell of Arctic weather, we were treated on the occasion to an unusually warm day, so warm as to make the Sheldonian Theatre a close approach to a Turkish bath. The ceremony had been carefully organized according to historical precedents; for both the new Chancellor and the Vice-Chancellor have a weakness for "functions." The Theatre was crowded, and it is a long time since so many undergraduates were to be seen in the Upper Gallery. The scheme of interspersing ladies among the occupants of the gallery (with a view to checking noise) was on this occasion abandoned, and certainly there was no need of the precaution, for the undergraduate was decorous to dullness, and was only moved to assert himself when Dr. Roberts, the organist of Magdalen, produced popular airs on the organ during the rather long interval of waiting.

Although unrehearsed, the proceedings went smoothly, though some amusement was caused by the constant bowings interchanged between the Chancellor and the Vice-Chancellor, and also by the fact that Lord Curzon's speech had been printed and distributed through the house beforehand, so that every one had a "book of the words" at hand, and the many allusions to the oratorical gifts of the Public Orator did not come as impromptus. Lord Curzon "did his part" well, and obviously (despite the heat of the day and very heavy robes) enjoyed the enthusiastic reception in his old University, where—if it may be breathed without offence—he has heretofore been more an object of interest than of popularity. He has signalized his installation by holding the London meeting of appeal for financial assistance to the University. That the University at once deserves and needs support from outside we should be the last to deny, but somehow, when all is said and done, a subscription list in which very small sums appear, while undoubtedly it reflects the loyalty of Oxonians, suggests the idea that the oldest University is tottering on the verge of bankruptcy.

Some of the Colonial visitors honoured Oxford with their presence not long ago and made a most favourable impression. There are, we believe, those who say that Mr. Deakin is a "discredited politician," but that was not the feeling which he evoked here, and most assuredly he is an effective politician.

Of purely University matters notice may be taken of the fact that the School of Literae Humaniores has been exempted from the statute which postponed the date of the Final Schools. The reason given was that a large number of the men in for this school would also enter for the Home and Indian Civil Service Examination, and it would be both unwise and unfair to cripple candidates for an examination in which Oxford takes a leading part. Next we have had the appointment of Mr. Haverfield, of Christ Church, to succeed the late Prof. Pelham as Camden Professor of Ancient History. Mr. Haverfield is well known as a scholar and student, and as an authority on Ancient Britain, but his Ford Lectures showed that he had the gifts of an historian as well. There were who thought that Mr. Macan, the new Master of University, would be promoted from the Readership in Ancient History to the Camden Chair.

Further, we were privileged (or otherwise) to listen to a very acrimonious debate in Convocation when it was decided that the All Souls Reader in Law should not be made an *ex-officio* member of the Board of the Faculty of Law. All Souls, of course, by its constitution contains some of the leading lawyers in the University, and, so far as the mere legal outsider could gather, it was a question of the jealousy of the Law tutors in other colleges of the predominant part played by All Souls in the subject.

The Eights are now on, and there is prospect of very exciting racing between Magdalen (the head boat), coached by Mr. Harcourt Gold and containing several "Blues," and Christ Church, coached by Mr. Fletcher, whose oarsmen are not yet known to University fame. If Magdalen escape, it is as much as they will do. The University Eleven, which was expected to be strong has not as yet covered itself with glory.

The following have satisfied the examiners in the Theory, History, and Practice of Education:—K. Ll. Kenrick, B.A. Jesus; S. B. Smith, B.A. Lincoln; C. Wyatt-Edgell, B.A. New College; Maggie Laing, Redland High School, Bristol; Emma Lowde, Aberystwyth College and London University; Alice Rosa Ridgeway, London University.

(*From our own Correspondent*).

Cambridge.

One of the functions of the May term is already over: as in duty bound, the University conferred on Prince Fushimi of Japan the degree of LL.D. The scene was not particularly impressive, as our distinguished visitor and his suite donned the sober mufti of private life instead of the trappings of war. The Prince seemed pleased with the warmth of his reception, but men who have made history passed unnoticed in the crowd. The Senate House Syndicate should devise some method of labelling the lions on these occasions. The great day at the end of term is to be signalized by the conferment of degrees upon Lord Milner and Lord Curzon, with the Prime Minister and Mr. Haldane thrown in to show that politics don't count. The King of Siam will receive his degree on the same occasion.

We have had a little tea-cup scandal here, which has provoked much cheap wit on the subject of Bridge and Cam-bridge in the London press. Two strangers entertained some undergraduates, and a police court appearance of one and the disappearance of the other stranger followed in due order. Fortunately the Cambridge undergraduate is not such a fool as he looks, and the worms turned to some effect.

Mr. Adam Sedgwick ceases to be Tutor of Trinity at the end of this term, and gives up office amid the regrets of all his pupils and friends. He is to be succeeded by Mr. W. C. D. Whetham.

Residents were deeply grieved to hear during the vacation of the tragic death of Mr. R. M. Towers, one of the lecturers under the Indian Civil Service Board. Cambridge can ill afford to lose any member of the interesting band of men who, after filling high office abroad, come back to give the benefit of their wisdom and experience to the future rulers of India resident among us.

A report appears in the press that Dr. Alex. Hill, Master of Downing, is going to resign the Headship of the College. Such an event has hardly occurred within living memory. No one is surprised at the news. Everybody will sympathize with the Master: people think much and say little.

An interesting discussion has taken place in the Senate on the question of abolishing the prize recitations at the end of term. Every one feels that the present plan is a grotesque failure, though perhaps not more so than the practice of reading theses for Law and Medical degrees or preaching long sermons in the University Church as a condition precedent for the Divinity degrees. One speaker went so far as to say that in matters of ceremonial we had a little to learn from Oxford. If the London and North Western Railway would only run a decent service of trains between the two University towns, we at the two ends of the track would find much to learn from each other.

The election to the Drapers' Professorship of Agriculture takes place on June 1, Prof. Middleton having left us to enter the service of a discriminating Government Department. One of our leading land agents has also left us for responsible work of the same character under the Board of Agriculture. There seems to be a run on Cambridge men for technical appointments, and the result is stimulating in the extreme.

The universal complaint among Cambridge scientific men is that the Cambridge system does not train men in powers of expression, and this after all the talk years ago of the necessity of making essay-writing a compulsory subject in all examinations. It is an actual fact that the Board of Studies charged with the duty of regulating the study of Modern Languages (including English) offered lectures on English composition for the benefit of the poll men, and yet not a single lecturer sent a single man to be taught. The whole thing is a crying scandal: the average Cambridge man cannot write, and in many cases cannot speak, his mother tongue: he spells with pain and writes in agony; but, as he gleefully observes: "They won't pluck me for spelling, and anybody can pass in 'Essay.'"

It is proposed to make the Slade Professorship of Fine Art a life appointment, with this proviso—that the first appointment shall be for three years, and any reappointment is to be for life. This is a mistake. Far better would it be that all professorships should be held on the three-years system. Research would be stimulated and apathy rewarded by relapse into the obscure. Till the University is run on business lines, we cannot expect the hard-headed millionaires to obtrude their cheques upon us. When Cambridge proves its value it will have no difficulty in getting its price.

Our cricketers are covering themselves with glory. Lancashire and Dublin University have suffered single-innings defeats by teams containing only a single old "blue." The supply of good men is unlimited.

It is hard to imagine that within a few days of the appearance of these notes the festivities will be upon us: furs will be the only wear at the races, and skating will be within the bounds of possibility.

Oxford has established a Diploma in Anthropology: we follow.

The Syndicate appointed to obtain plans for the extension of the Chmeical Laboratory have laid their scheme before the Senate. They propose to fill in the gap which now exists along Pembroke Street between the Medical School and the existing Chemical Laboratory with a three-storied building. This will provide for a large increase to the Elementary Laboratory, a number of smaller laboratories, and a lecture room to seat 150 students. The cost is estimated at £13,500, and, in view of the facts that in the last three years the average attendance at the University laboratory has increased from less than 200 students to over 300 a term, and that Gonville and Caius College proposed to close their laboratory next summer, the building of the extension is urgent.

The Registrary gives notice that the total number of matriculations during the present academic year has been 1,083, as compared with 1,065 on a similar date last year.

London.

In his annual report on Presentation Day (May 8), the Principal (Sir A. W. Rücker) points out that the admissions to the University were 3,041 last year, as compared with 3,105 in 1905–6. A rise of 2½ in the percentage of failures at the Matriculation Examination and the School Examination (Matriculation standard) was chiefly responsible for the decrease, failures last year totalling 60·3 per cent. Compared with 1899–1900, the year previous to that in which the University was established on its present footing, the entries show a rise of 63 per cent. Internal students now number 3,300, an increase of about 14 per cent. above the figure for 1905–6, which itself was 12 per cent. higher than that for 1904–5.

Lord Rosebery, the Chancellor, commented on the progress of the University, and referred in flattering terms to the more important benefactors, notably certain South African millionaires.

In the graduates' list for the B.Sc. (Economics) degree, pass and Honours, there were 6 presentees; for the B.Sc. (Engineering), pass and Honours, 51; for the B.Sc. Engineering (Metallurgy), pass, 2; for the B.Sc., pass and Honours, 272, of whom 54 were women; for the B.Sc. by Research, 5; and for the B.Sc. (Agriculture), 1. Seven received the B.S. degree, pass and Honours. For the M.B., B.S. degree, pass and Honours, 123 were presented, and of these 23 were women. In the LL.B., pass and Honours list there were 20; and 231 took the B.A. degree, of whom 148 were women. For the B.D. pass and Honours degree 17 were presented; for Pedagogy, 47 women and 4 men; for the M.A. degree, 6 men and 3 women; for the D.Sc. (Economics) degree, 9 men and 2 women; for the M.D. degree, 50, of whom 4 were women; for the M.D. and B.S., 1; for the M.S., 5; for the LL.D., 2—William G. Earengey and Andrew E. Jackson; for the D.Litt., 5—George Armitage-Smith, James H. E. Crees, St. John's College, Cambridge, Phœbe A. B. Sheavyn, Arthur S. Way, and Herbert B. Workman; and for the D.D. degree, Herbert H. Scullard and Arnold R. Whatley, St. John's Hall, Highbury.

A special service, promoted by an undergraduate committee, was held in the evening in Westminster Abbey. There was a large attendance of members of the University. Academic dress was worn by both men and women. The sermon was preached by the Dean.

On Presentation Day Bedford College for Women presented 25 students for degrees in Arts, 13 for degrees in Science, 7 for post-graduate diploma in Pedagogy, 1 for Gilchrist Studentship, and 3 for University Scholarships. A reception held afterwards at the College was attended by about 400 guests, including many former students.

The East London College has been admitted by the Senate as a school of the University in the Faculties of Arts, Science, and

Engineering for a period of three years on the understanding that the Governing Body of the school shall do their utmost to satisfy the Senate upon certain points of educational organization and finance.

On Whit Monday nearly a hundred representatives of the University, including the Vice-Chancellor, the member for the University, the principal deans of faculties, and members of the professorial staff, proceeded to Paris on a three days' visit at the invitation of the University of Paris. On Tuesday there were addresses in the great amphitheatre of the Sorbonne, luncheon at the Hôtel de Ville, a visit to Versailles, and a reception by the British Ambassador. On Wednesday an excursion was made to Chantilly, and in the evening private dinner parties were given by the Vice-Rector, deans of the faculties, and professors of the University. Thursday morning was occupied with visits to educational institutions, and in the afternoon the President of the Republic held a reception at the Elysée. The visit terminated with a banquet at the Sorbonne, followed by a concert under the direction of M. Saint-Saëns in the great hall and a conversazione in the reception rooms of the Sorbonne. The short time at the disposal of the guests rendered it necessary to decline cordial invitations to visit the Universities of Bordeaux and Nancy.

The semi-general election of members of the Senate has been brought to a conclusion by the appointment by the following bodies of their representatives for the period 1907–11 as under:—Convocation (Divinity)—Rev. J. A. Douglas, B.D., B.A.; Convocation (Arts)—Mr. R. C. B. Kerin, B.A., and Dr. T. Lambert Mears, LL.D., M.A.; Convocation (Medicine)—Prof. Sir Thomas Barlow, M.D., B.S., D.Sc., LL.D., F.R.C.P.; Convocation (Science)—Dr. C. W. Kimmins, D.Sc., M.A., Dr. J. Wade, D.Sc., and Dr. S. Russell Wells, M.D., B.Sc.; Royal College of Physicians of London—Dr. F. Taylor, M.D., F.R.C.P., M.R.C.S.

The following Doctorates have been conferred:—D.Sc. (Economics) (Internal) on Miss V. M. Shillington and Miss A. B. W. Chapman, of the London School of Economics, for theses entitled respectively "Mediæval Commercial Relations of England and Portugal" and "Modern Commercial Relations of England and Portugal"; D.Sc. in Chemistry (Internal) on Mr. J. C. Crocker, of the South-Western Polytechnic, for a thesis entitled "The Velocity of Hydrolysis of Aliphatic Amides"; D.Sc. in Logic and Methodology (External) on Mr. T. P. Nunn for a thesis entitled "The Aim and Achievements of Scientific Method" and other papers.

Durham. The grounds of opposition taken by a section of the Durham University graduates to the scheme for the reconstitution of the University are set forth in a statement issued by the Rev. L. L. Barclay, President of the Central Durham Graduates' Association. He says that the most objectionable provisions of the proposed Bill are the following:—(1) The suppression of the veto of Convocation—the one and only way in which native graduates can give expression to their views. (2) Hitherto Durham has been under the government of graduates of other universities. There are three Durham men on the present Senate of seventeen members. Under the Bill it is proposed to perpetuate this system of government by alien graduates, and to make it absolute. Six out of thirty-seven members of the proposed new Senate are to be Durham men, and on the Durham College Council there is to be one Durham man out of twenty-four members. (3) The *locus* of the University is to be at Durham for ten years, and "thereafter as the Senate shall determine." We are to be graduates of Durham for ten years more, and after that—of where! The statement proceeds to call for further discussion, and to complain that the progress of the Bill has been mercilessly hurried. "Its provisions were only issued to Dunelmians on March 18, and on the 20th a so-called conference was held, at which we were lectured and discussion was stifled. The Convocation at which the Bill was presented [April 27] was one almost entirely confined to the conferring of Medical degrees, and it was held on a day and at an hour which made it impossible for most of the members to be present. Even then the Bill was only approved by a majority of sixteen, composed largely of holders of *ad eundem* degrees." In conclusion, it is stated that the establishment of a rival B.A. at Newcastle, free from the drawbacks of compulsory Greek and academic residence, may be the ruin of Durham.

The Sunderland Town Council are of opinion that the Durham University Bill should be amended so as to make all colleges of university type in the county of Durham constituent parts of the University, and they have decided to urge the University authorities to consent to this alteration. It is very doubtful whether it will be practicable to carry out this suggestion, at any rate at the present time. The object is, of course, to get the Sunderland Technical College affiliated with the University, and this opens up a wide question, affecting other places as well as Sunderland.

Scotland. In the *University Review* Principal Donaldson, of St. Andrews, has an article respecting the Scottish Universities in their relation to the State and the Privy Council. It is largely a reply to a contribution by Principal Laurie which appeared in the same publication in October last. Principal Donaldson holds that the Scottish Universities have always been State institutions, and in supporting that contention he examines the finances and the teaching in the past, his exposition, however, being, as he points out, only a short summary and not a complete record of the case. By this summary it is shown that the State claimed the entire funds of the universities. It also regarded it as its duty to maintain the universities. No accusation, therefore, could be made against the State that it confiscated property. It had full right to do what it did. It was another question, however, whether it acted wisely in these matters. The case of the Scottish universities is, it is remarked, entirely different from that of those of England. The Scottish universities have "a right to expect that the State will furnish them with all the resources that are necessary to make them effective institutions." After discussing his remedy for the difficulties in which the universities are involved, Principal Donaldson says that the universities are in a healthy state of activity and have made great progress since 1890.

St. Andrews. The figures for the past winter session show that in the United College there were 165 men and 121 women students—286 in all; in St. Mary's College, 19 men and 1 woman students—20 in all; and in University College, Dundee, 107 men and 88 women students—195 in all. The total number of matriculated students in the University was 291 men and 210 women students—total, 501. Last year the figures were 305 men and 195 women—total, 500. In the United College the total was exactly the same as for the preceding session; in St. Mary's College there was a falling off of 11 as compared with last year; and in University College, Dundee, the total was greater by 12.

MEETING OF THE COUNCIL OF THE COLLEGE OF PRECEPTORS.

A meeting of the Council was held at the College, Bloomsbury Square, on May 15. Present: Dr. Wormell, President, in the chair; Prof. Adams, Dr. Armitage Smith, Mr. Barlet, Rev. J. O. Bevan, Rev. J. B. Blomfield, Rev. A. W. Boulden, Mr. Charles, Miss Crookshank, Miss Dawes, Mr. Hawe, Mr. Kelland, Prof. Lyde, Dr. Maples, Mr. Millar Inglis, Mr. Milne, Bishop Mitchinson, Dr. Moody, Mr. Morgan, Mr. Pinches, Mr. Rule, Rev. Dr. Scott, Mr. Starbuck, and Mr. White.

The minutes of the last meeting were read and confirmed.

The diploma of Licentiate was granted to Mr. E. F. Thompson, who had satisfied the prescribed conditions.

Delegates were appointed to represent the College at the forthcoming Federal Conference on Education promoted by the League of the Empire; and a representative of the College was appointed to serve on the Education Sectional Committee of the National Union of Women Workers.

The following persons were elected members of the College:—

Mr. F. W. Cape, 15 Chatfield Road, Croydon.
Mr. J. G. Cowen, A.C.P., Littleton House School, Knowle, Bristol.
Mr. N. K. Dikshit, B.A., Baroda, India.
Mr. E. E. Lupton, A.C.P., 10 Bierley Lane, Dudley Hill, Bradford.
Miss B. McMahon, L.C.P., St. Joseph's Convent, West Hartlepool.

The following books had been presented to the Library since the last meeting of the Council:—

By the Author.—Spargo's Ideal Spelling Book.
By G. Bell & Sons.—Levander's Memorabilia Latina.
By Blackie & Son.—Tales from Pickwick; Cæsar, Gallic War, VII.; Carlyle's Hero as Poet and Hero as King; Heath's Lessing's Selected Fables; Major's Moral Instruction (Middle Stage); Marsh's Literary Reading and Composition; Morgan and Balley's English History from Original Sources, Book II.; Orange's Dona Reginæ and other Scenes; Scott's Legend of Montrose.
By Cassell & Co.—Calder, Marshall, Son, and Ibotson's Book-keeping.
By G. Philip & Son.—Hirons's In Nature's Storyland.
By Relfe Bros.—Carter's Sketch Map Geography (England and Wales).
Calendars of University College of Wales, Aberystwyth, and Royal University of Ireland.

OXFORD REFORM BY OXFORD TUTORS.

The *Times* has just published a series of suggestive articles under the heading "Oxford and the Nation," contributed by "some Oxford Tutors." In the last article (May 11) the writers consider the demand for a third University Commission. "The University," they conclude, "is clearly entitled to claim that fetters which the State imposed under the conditions of a generation ago and which the State alone can unloose shall be made the subject of close and provident inquiry," while "the State is no less bound to review from time to time, and to relax or emphasize as required, restrictions imposed for the specific ephemeral purpose of habituating Oxford opinion to certain modes of conducting the University's business." They close their inquiry with some suggestions of their own "which embody the gist of these essays, and embody also the principles which (they believe) should inspire the reforms of the next few years." They "propose without reserve to construct Cloud-cuckoo-town, as the prelude to realizing it by the Isis."

The Function of a University.

We believe (they write) that the function of a University is threefold. First, it exists to carry the curriculum of a "good general education" from the point where secondary education leaves it, with a youth of seventeen or eighteen, up to the point, at about the age of twenty-one, where strictly professional studies begin to demand most of his time. We prefer the initial age of seventeen to that of eighteen, partly in the interest of the boy from modern secondary schools, but also in that of the sixth-form boy of the "public schools." The latter at present is kept at school work for a full year longer than is desirable, under colour of the "prefectorial system." But this discipline we believe that he would receive quite as efficiently if he reached the head of his school a year earlier: it is because he is responsible, not because he is over seventeen, that he gets from it the training he does. In the Navy an even better training is acquired by boys of sixteen and less, simply because their responsibility is more absolute.

Secondly, the University exists to provide for studies preparatory to professional life in as many departments as possible, from the point where these studies are based upon the general knowledge acquired in an "Arts" course, up to the point where theory and the experience of others begin to give place to experience self-earned; *i.e.*, in what we may conveniently describe as the "clinical" or "apprentice" stage. It is in this deliberate provision of professional or higher faculty training in succession to the Arts course that our University would differ from "college" in the modern sense of that word.

Thirdly, we look to the University for opportunities for the advancement of original learning, in close organic association with the responsibilities and the stimulus of teaching. Universities, that is, differ for us from academies in that they research but teach as well. This phase also begins from the point where the newly graduated bachelor begins to prolong his education days by a fifth year scholarship, or by "taking pupils," up to the point where the "extraordinary" professor—to use a current euphemism—disappears in transcendental clouds above the heads of the regular staff of faculties and laboratories.

The Universities and the Public Schools.

On this general hypothesis of what our University is, we begin our reforms from below. We would emancipate our University from the domination of the public schools, and of the unemployable rich, by rejecting in our entrance examination those boys to whom by the age of seventeen the schools have not succeeded in giving a working knowledge of three languages (one of which shall be either Greek or Latin), of elementary mathematics, and of some branch of natural science; together with a good general acquaintance with English history and literature, and with the literature (though not the doctrines) of some one religion, usually the Christianity of the New Testament. We would, therefore, greatly reform Responsions, and abolish the present blasphemous farce of "Divinity Moderations." The entrance examination would be in the hands of the University; but equivalent certificates would be accepted, more systematically even than at present. Failure to pass the entrance test should preclude matriculation; and non-membership of the University should preclude membership of any college or hall. In plain English, no one could "come up" or play for his college until he had passed "Smalls." This supplement to the Laudian statutes could be offensive to none but professional athletes and the managers of academic hotels.

The Degree Course in Arts.

The academical course would consist, as in theory it does at present, of two parts. The "degree course" in Arts would involve three years' residence, with an intermediate and a final examination; and would lead to the B.A. degree. All undergraduates who failed to pass the intermediate or final examination within a statutory number of terms would be "sent down" by the University. This would be yet another return to mediæval practice, and would inconvenience only those colleges who needed for their boat or eleven an athlete who had been ploughed twice or more in "Mods." or "Prelims." At present it is the colleges, not the University, which normally "send men down"; and it is intercollegiate competition in things unacademic which produces *pari passu* the current athleticism and the worst sorts of passmen. In the final examinations we would exact from every passman proficiency in the language and literature of some one country, not his own, with a good general knowledge of its history, together with a working knowledge of political economy and the law of contract, but with the option of substituting for one or other of these two (but not for both) some one other subject chosen from a wide range of alternatives such as large branches of natural science, or other languages, literatures, and periods of history. In each of these subjects it should be permissible for a man of anything more than mere industry to score "distinction." The Honour schools in Arts we would restrict in principle to real "arts" subjects; the second or postgraduate part of our academical career would supply ample opportunity for specialized courses in the narrower fields of knowledge administered by the higher faculties.

Higher Degrees.

These postgraduate courses might lead either to the Bachelor's degree of a higher faculty, as at present, or to the M.A. or to both. The arrangement, however, which we prefer is again the mediæval one, adapted to modern needs—namely, that no one should be permitted to proceed to the degree of M.A. unless he satisfied the University, as of old, that he was *qualified to teach* the subject of whatever postgraduate studies he had pursued, and that he had mastered in addition the elements of educational theory and practice. This would revive the original meaning of the M.A. hood, and legalize its current significance as the badge for the most part of the schoolmaster and the parson, while justifying the veneration of their flock. Every undergraduate who had passed his intermediate examination in Arts would be admissible as a student in any higher faculty, and would proceed to the B.D., B.Sc., and the like at the end of three years' residence; but he would not proceed to the degree of B.A. unless he had also spent at least two years as an accepted student of Arts and had satisfied the Arts requirements. Bachelors of higher faculties would be just as admissible to the M.A. degree as are Bachelors of Arts, provided they knew how to teach.

Convocation reformed.

Convocation would consist of all Masters, as of old, and all Doctors of the ancient higher faculties, but would include also the Doctors of Letters and Science and of all the new faculties of the kind we have already suggested. To the Convocation thus composed, however, we would add also, to meet modern conditions, all Bachelors of any higher faculty. The opinion of such advanced students is obviously of real weight, even though they may not have attained to the degree of Doctor, and even if they are not qualified to be teachers. The mere Bachelor of Arts, however, we would exclude from Convocation until he had qualified as a *bona fide* teacher by proceeding to the reformed M.A. Convocation, thus reformed, would remain, as at present, the ultimate Governing Body of the University. It would retain the final decision in all large questions of University policy, such as the establishment of new faculties and chairs, and would be entitled to satisfy itself as to the management of its estates, institutions, and departments.

Congregation reformed.

But all questions affecting the actual studies of the place, the details of examinations, lectures, and the like, would be committed once and for all to a reformed Congregation. This would consist only of the University staff of professors, readers, and demonstrators of at least Master's degree, together with all college readers or lecturers in whose terms of appointment the University or one of the boards of faculties had had a voice. This would not, of course, preclude a difference of opinion between the University and the colleges, but it would make the University master of its own teaching and examinations, which it is very far from being at present. . . . Congregation would appoint, as at

present, a Hebdomadal Council, somewhat larger than at present; but the "reserved seats" for professors and heads of houses would be abolished, and provision would be made for direct representation of all higher faculties, and of each main sub-division of the Arts Faculty; perhaps, also, of the chief University institutions, such as the Bodleian Library, the museums, and the boards for external examinations. To put a stop to interminable delays, there would also be direct and responsible representation of the University's finance. It would contribute hardly less to general efficiency if there were even a kind of ambassadors' bench in Council, for the accredited representative of Cambridge, London, or, indeed, any great University which has common concerns with our own.

THE COLLEGES FEDERATED.

With the colleges it is difficult to discover how far public opinion is as yet prepared to go. They have had now a full half-century to revert to their founders' intentions. For the most part they have failed to do so. They have failed no less to set bounds to suicidal competition; this, in fact, becomes yearly more flagrant and more unacademic. They have failed, most of all, to realize that their function is to be United States, not a Concert of Europe; to be the instruments, not the masters, of Oxford. It may be that the necessary expenses of upkeep and social intercourse really make college life more expensive, in spite of endowments, than life in suburban lodgings: if so, the founders are to be commiserated, and the colleges abandoned to their fate. But it may be that here, as elsewhere, it is the way the colleges are managed, not the college system, which is responsible for their present failures; and, if so, it is high time that the managers were called to account. The prudent course, as it seems to us, would be, first, after careful inquiry, to remove all real Parliamentary impediments to free inter-collegiate experiment; to lay down broad general principles of co-operation and academic policy; to allow a reasonable interval, yet once more, for the colleges which see a remedy to apply it and go forward; and then, wherever this last chance has been abused, frankly to disestablish and disendow. But we are optimists; and, as we believe in Oxford's destiny as a live and leading University, so do we believe in the possibility of a real federation of the colleges.

CONFÉRENCES FRANÇAISES.

SOCIÉTÉ NATIONALE DES PROFESSEURS DE FRANÇAIS EN ANGLETERRE.

LAMENNAIS.

Par l'Abbé MARGUERÉ.

LE 27 avril dernier, M. l'abbé Margueré nous parlait de Lamennais. Nous avons gardé bonne souvenance de la manière dont il avait traité Lacordaire il y a environ un an, et il nous a de même charmé cette fois par cet esprit libéral, cette largeur de vues dont il nous avait lors donné des preuves. M. Minssen, président de la Société, était au fauteuil.

Le conférencier nous a montré, au début, la part considérable que Lamennais prit dans ce mouvement religieux qui a dominé le XIXe siècle. Trois doctrines effectivement remplissent l'histoire religieuse du siècle qui vient de disparaître—l'ultramontanisme religieux, le catholicisme libéral et enfin le socialisme chrétien.

Prophète, Lamennais certes l'a été, car il a deviné ce que personne ne soupçonnait de son temps, et ce que nous commençons à entrevoir maintenant. Il a été un puissant initiateur, un semeur d'idées sans égal; et s'il a quitté l'Eglise, c'est que les idées qu'il avait jetées dans son champ ne germaient pas assez vite à son gré. Mais il n'en reste pas moins vrai qu'il n'y a pas d'homme qui ait joué un rôle plus considérable, en notre temps, dans l'histoire des idées religieuses.

Né à St. Malo, en Bretagne, patrie de tant d'hommes illustres —des Chateaubriand, des Brizeux, de Renan, de Jules Simon —Lamennais devait subir l'influence du milieu dans lequel il se trouvait jeté par le sort. La mort de sa mère qui fut pour lui un malheur irréparable, le sombre aspect des lieux qu'il habita, une santé chétive, une éducation manquée, la perte de la fortune paternelle occasionnée par la grande Révolution, tout cela, joint à un tempérament naturellement triste, devait exercer une profonde influence sur sa vie, atténuer l'action de son génie, et l'enfermer dans une sorte d'isolement.

Au lieu d'embrasser la carrière du commerce, il accepte une chaire de mathématiques dans sa ville natale. Son père mort, il se retire à la Chesnaie, modeste maison de campagne, qui, plus tard, devait acquérir, comme nous dit Lacordaire, une si mystérieuse célébrité. C'est de là qu'il lance son premier ouvrage "Réflexions sur l'état de l'Eglise en France en 1808," lequel fut supprimé par la police impériale. Puis il passe en Angleterre, où il donne des leçons de français, et enfin, surmontant ses irrésolutions, il entre dans le sacerdoce. Peu après il publie son "Essai sur l'Indifférence en matière de Religion." Emotion que suscite ce livre, et qui augmente encore par la publication du second volume. Lamennais, attaqué par une partie du clergé français, est cependant défendu par Joseph de Maistre et de Bonald. Il fonde à ce moment le journal *L'Avenir*, qui, peu après, est condamné par Rome, ce qui met Lamennais dans une situation de plus en plus difficile. S'il eût eu l'âme ardente et pleine de foi de Lacordaire, il se fût soumis; mais Lamennais était un esprit hautain et fier, prêtre sans vocation religieuse, et il céda à la tentation la plus dangereuse de toutes, "l'orgueil dans le bien." Il publie à ce moment son livre sur les "Affaires de Rome," réponse à l'Encyclique qui le condamne, et qui marque dans sa vie une nouvelle existence.

Cette nouvelle période de sa vie, on pourrait l'intituler "le Lamennais après la chute," et à vraiment bien la considérer de près, elle ne diffère pas beaucoup de la première. Qu'est-ce, en effet, qu'il s'est proposé? Etablir la souveraineté de la religion parmi les hommes—et là est le sens de l' "Essai sur l'Indifférence"—et comme il y en a plusieurs moyens, il a d'abord invoqué contre le progrès croissant de l'irréligion "l'alliance des vieilles souverainetés." Mais, s'apercevant que les vieilles souverainetés ne voulaient retenir de la religion que ce qu'elles croyaient utile à leurs intérêts, il a voulu séparer la religion de la politique, et, selon la juste expression de Renan, c'est alors qu'il a constitué la religion en parti. Rome a refusé de le suivre ou de se laisser entraîner dans cette voie, pour des raisons dont elle seule était juge, et qui avaient bien, en 1836, leur valeur politique. Lamennais a rompu avec Rome, et c'est ainsi qu'il s'est trouvé amené à poser la question dans les termes suivants: "Qu'est-ce que le christianisme dans ses relations avec les sociétés humaines? Quel en est le caractère? Quel ordre de pensées et de sentiments a-t-il développé dans le monde?" Il ne pouvait faire qu'une réponse, lui qui jadis avait fondé la religion même sur l'autorité du "consentement universel"; cette réponse était que le christianisme et la démocratie ne sont qu'un.

Voilà l'origine de ce que nous appelons aujourd'hui le christianisme social, ou le "socialisme chrétien," dont la pente irrésistible est vers le socialisme pur, et qui sera l'idée directrice et la fin de la vie de Lamennais.

De ses autres écrits, inférieurs aux premiers, il en restera un intitulé "Enquête d'une philosophie," que Paul Ganet a si bien nommé "Philosophie de l'évolution." Si maintenant on juge l'écrivain, nous dirons en deux mots qu'il fut "l'écrivain le moins personnel" dans son style, et "le plus entier dans ses idées," en même temps que l'un des plus puissants de notre temps.

La fin de sa vie fut triste, mélancolique, et, selon l'opinion de quelqu'un qui vivait près de lui, "il se coucha dans son obstination et sa colère, et sa mort eut toutes les apparences de l'impénitence finale." Maintenant qu'il appartient à l'Histoire, jugeons-le avec impartialité et justice; ne le condamnons pas: plaignons-le.

Bien peu parmi nous seraient prêts, à son exemple, à donner leur vie pour l'intégrité de leur pensée. Il l'a fait, et pour cela il mérite notre estime et notre admiration. Et si vous le condamnez aux flammes éternelles, conclut le conférencier, je vous dirai avec Renan, que j'envie la place donnée à certains réprouvés, et que, comme Dante l'eût certainement fait, je le placerais au milieu des élus.

CORRESPONDENCE.

CHILDREN'S MORAL EXPERIENCE.

To the Editor of "The Educational Times."

SIR,—In your interesting report of the discussion on Prof. Findlay's paper on the 17th ult., some remarks of mine are not stated quite accurately. What I said was that a child of seven knew the meaning of great moral principles, and, to *a limited extent*, their intellectual application. The moral meaning needs to be enforced, the intellectual application needs to be explained. The true teacher will see to *both*.—I am, Sir, &c.

Hampstead, *May* 7, 1907. H. LANGHORNE ORCHARD.

EDUCATION "OTHER THAN ELEMENTARY."

NEW CONDITIONS OF THE GRANTS.

In the House of Commons, on May 15, Mr. Silcock submitted a resolution affirming that it was desirable that further encouragement should be given by the Board of Education to secondary schools which came under the classification of "other than elementary," and that the principle of local control should be extended to those schools as well as to training colleges which receive help from public funds, at least to the extent of securing adequate local public representation on the governing body, and, further, that all schools and training colleges assisted by public funds should be freed from all sectarian tests for teachers, scholars, or members of the governing body. Mr. Adkins seconded. He regarded the prevalent want of sympathy with higher education among the English people as a danger to the State, and he urged that efforts should be made to encourage popular interest by establishing local control, abolishing sectarian tests, and making it easy for the many to obtain education of an advanced kind.

Sir Philip Magnus was strongly of opinion that wherever children were found in elementary schools showing special ability they should be seized in the interests of the State and given higher education in secondary schools of different types. That could only be done by means of scholarships, but he did not think the selection for scholarships should be made by means of competitive examinations. He did not attach so much importance as others to public control for secondary schools, and he did not think the religious difficulty existed in those schools to any serious extent. Mr. Shackleton admitted that the demand for higher education on the part of the working classes was not so urgent as it should be, but he maintained that it was the duty of the State to encourage the demand by removing existing barriers which prevented working-class children from taking advantage of opportunities for higher education.

Mr. M'Kenna pointed out that the regulation which required a secondary school to charge fees in order to make it eligible for grants no longer existed. The provision in this year's regulations was that "a school may be with or without fees; but any scale of fees must be approved by the Board." He informed the House that in 630 secondary schools receiving grants from the Board of Education there were 104,938 scholars of whom 56,858 came from public elementary schools. Of the latter 28,000 were attending secondary schools already under complete municipal control, and 29,000 paid no fees at all. In addition there were in the public elementary schools 1,048,000 children between the ages of twelve and fifteen who were getting something better than the merest elementary education, and 5,140 more above the age of fifteen; while in higher elementary schools there were 6,359 between the ages of twelve and fifteen and 402 above fifteen. He thought the House would recognize from these figures that the position, although nothing like what he would like to see, was not quite so black as it had been painted. As he had said, the duty of providing schools by law rested upon the Local Education Authorities; but it was the duty of the Board so to administer the grants as to secure that the will of Parliament, whatever it might be for the time being, should be carried out. If they took away the grants from schools which refused to submit to popular control, the result, in many cases, would be to close them. The position, so far as he was concerned, had been relieved by the fact that the Chancellor of the Exchequer had placed at his disposal additional money for secondary education, and he thought that money would give him the opportunity which was desired. He proposed to divide the grants for the ensuing year into two categories. All the schools which refused to be under any but the old regulations would receive the old grants and nothing more. If they had not been able to live in the past, they would not be able to live in the future. The new money would be given only to schools which conformed to the new conditions, which were as follows:—In the first place, there must be a majority of representative managers in the government of the schools; secondly, the instrument under which the school was governed must not require any member of the teaching staff to belong, or not to belong, to any particular denomination; thirdly, that instrument must not require a majority of the governing body to, or not to belong to, any particular denomination. With regard to training colleges, he had come to the conclusion that in every college there ought to be a conscience clause. It would be put in the regulations; but it would not come into force until next year. He claimed that, so far as the Board of Education could act by its administrative powers, it had carried out the recommendations contained in the motion.

Sir William Anson expressed doubts as to the wisdom of the new provision that no secondary school was to be required to charge fees. Mr. Yoxall pointed out that a considerable number of the children receiving free education in secondary schools were prospective pupil-teachers. Mr. Butcher, while in favour of some representation on the governing body of schools in receipt of State grants, either to the Local Authority or the Board of Education, could not support the idea of full popular control. Mr. James Stuart thought the Board of Education should do more to diffuse among Local Authorities information as to the kinds of secondary schools which were required.

The motion was withdrawn.

THE IMPERIAL COLLEGE CHARTER.

The draft of the proposed Charter for the Imperial College of Science and Technology sets forth that the Government will hand over to the Governing Body the buildings of the Royal College of Science and the Royal School of Mines, that the Royal Commissioners of the 1851 Exhibition will assign to them certain portions of their estate at South Kensington, that "divers persons are prepared to make munificent contributions towards the establishment and support of the College," and that the City and Guilds of London Institute will conditionally constitute their Central Technical College an integral part of the Imperial College. The purposes of the institution will be "to give the highest specialized instruction, and to provide the fullest equipment for the most advanced training and research in various branches of science, especially in its application to industry, and to do all or any of such other things as the Governing Body consider conducive thereto."

The governing body will consist, when complete, of forty members, to be appointed as follows:—Six by the King in Council; four by the President of the Board of Education; five by the University of London; five by the London County Council; five by the City and Guilds of London Institute; two by the Royal Commissioners for the 1851 Exhibition; one by the Royal Society; four by the professorial staff; eight by various technical societies—viz., one each by the Institutions of Civil Engineers, Mechanical Engineers, and Electrical Engineers, the Iron and Steel Institute, the Institution of Naval Architects, the Society of Chemical Industry, the Institution of Mining Engineers, and the Institution of Mining and Metallurgy.

The Royal School of Mines will retain its name, and the Associateship of the school will continue to be awarded. In future, the Central Technical College of the City and Guilds of London Institute will be known as the City and Guilds College, and the Institute will continue to award the diplomas of Fellow and Associate. The City and Guilds College will be managed by the committee of management appointed by the Institute, to which committee the governing body of the Imperial College will add five members. The governing body of the Imperial College will meet at least four times a year, and each member will normally be appointed for four years.

With respect to the relations between the Imperial College and the University of London, Article 7 of the draft Charter runs:

Subject to compliance with the Statutes of the University of London, and pending the settlement of the question of the incorporation of the Imperial College with that University, the Imperial College shall be established, in the first instance, as a school of the University. The Governing Body shall enter into communication with the University of London with regard to the co-ordination of the work of the Imperial College with the work of the University and its other schools, and for the purpose of carrying out or facilitating such co-ordination may enter into such arrangements, either by way of transferring or exchanging departments of instruction or otherwise, and upon such terms as may be agreed upon between the governing body and the University.

The governing body will, under certain conditions, be allowed to recognize other colleges and institutions as being in association with the Imperial College. In order that the advice of independent experts, especially persons with practical experience of industrial requirements, may be secured, the governing body will be empowered to appoint advisory boards. The question of the arrangements to be made for the biological department of the Royal College of Science is left over for future decision.

Petitions for or against the grant of the charter are to be sent to the Privy Council on or before June 6.

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M. F. Damiens will address the Société Nationale des Professeurs de Français en Angleterre on "Mme. de Staël et Napoléon" at the College of Preceptors on June 29, at 4 p.m.

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Canon Masterman, Professor of History in the University of Birmingham, will deliver a series of four lectures, on the Saturdays in June, in the nave of Westminster Abbey, under the auspices of the Workers' Education Association in conjunction with the University of London.

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The "Medea" of Euripides will be performed in Greek at the University of London, University College, on June 13 and 14 at 8 p.m., and on June 15 at 3 p.m., under the direction of Prof. Gardner, by students of University and Bedford Colleges. Music composed by Miss Maud Aldis; scenery designed by Prof. Simpson. Particulars from Mrs. Ernest Gardner, Hon. Sec., Greek Play Committee, University College, W.C.

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The "Antigone" of Sophocles in the original Greek is to be played by the boys at Bradfield College in the Open Air Greek Theatre on June 8, 11, 13, 15, and 17.

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The annual Conference of the Association of Head Mistresses will be held, June 7 and 8, at the Grey Coat Hospital, Westminster.

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The London Geological Field Class will make excursions to Sheppey (London Clay) on June 1, and to Herne Bay (Lower London Tertiaries) on June 8.

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The Royal Sanitary Institute holds examinations in Hygiene in its bearings on school life at Leeds on June 7 and 8; at Norwich on June 14 and 15; and at Manchester on June 21 and 22.

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The County Council of the West Riding of Yorkshire (Wakefield) announces Vacation Courses for Teachers both at home and abroad (Boulogne, Marburg, Santander).

Honours.

It is officially announced at Cambridge that the recipients at the forthcoming conferment of honorary degrees will be the King of Siam, Sir Henry Campbell-Bannerman, Lord Elgin, Lord Milner, Lord Curzon, Sir Edward Fry, Mr. Haldane, Sir Clements R. Markham, Colonel Sir T. H. Holdich, Prof. Sir T. R. Fraser, Mr. S. H. Butcher, M.P., and M. Alexandre Glazounow.

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The University of Oxford has conferred the following honorary degrees:—

D.C.L.: The Right Hon. F. R. Moor, Premier of Natal.

D.M.: Wilfred Thomason Grenfell, M.R.C.S., L.R.C.P.

D.Litt.: Il Commendatore Giacomo Boni, Director of Excavations in the Roman Forum; and Frederic David Matthew.

M.A.: Mr. C. H. Wyatt, Chairman of the Association of Directors

and Secretaries for Education, Director of Education for the County Borough of Manchester; Mr. Graham Balfour, M.A. Oxon., Vice-Chairman of the Association, Director of Education for Staffordshire; Mr. D. T. Cowan, Hon. Treasurer of the Association, Director of Education for Hampshire; and Mr. Austin Keen, Hon. Secretary of the Association, Education Secretary for Cambridgeshire.

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The Universities of Oxford and Cambridge have conferred honorary degrees upon Prince Fushimi of Japan.

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The University of Dublin has conferred the honorary degree of LL.D. upon the Colonial Premiers. Dr. Jameson and General Botha were unable to attend.

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The University of Edinburgh has conferred the honorary degree of LL.D. upon General Botha.

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The Royal University of Ireland has resolved to confer the honorary degree of LL.D. upon Dr. Windle, President of Queen's College, Cork, and the Rt. Rev. Monsignor Mannix, President of St. Patrick's College, Maynooth.

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The University of Liverpool has resolved to confer the following honorary degrees:—

LL.D.: Sir Edward Lawrence, Mr. E. K. Muspratt, and Dr. Rendall.

Litt.D.: Prof. A. C. Bradley, Prof. Eduard Meyer, Prof. Raleigh, and Sir W. Maunde Thompson.

D.Sc.: Prof. Forsyth, Prof. Gotch, Dr. Laveran, Sir Oliver Lodge, Sir John Murray, Prof. Osler, Prof. Ostwald, Sir William Ramsay, and Sir Henry Roscoe.

D.Eng.: Sir Alexander Kennedy.

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Prof. Sir William Ramsay, K.C.B., &c., has been elected an honorary member of the Academy of Sciences, Christiania; and has received from the Society of the Forty (Società italiana delle Scienze) the Matteucci gold medal for 1907.

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The Rev. Arthur Gray Butler, M.A., for fifty years Fellow, and late Tutor, of Oriel College, Oxford, has been elected an honorary Fellow of the College.

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The Ven. John Bond, M.A., Precentor of Lincoln, Archdeacon of Stow, has been elected an Honorary Fellow of Magdalene College, Cambridge.

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The Royal Institution has awarded the Actonian Prize (100 guineas) to Madame Curie for her essay "Recherches sur les substances radioactives."

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Prof. Ira Remsen, President of Johns Hopkins University, has been elected President of the National Academy of Sciences, in succession to Mr. Alexander Agassiz. Dr. C. D. Walcott, Secretary of the Smithsonian Institution, has succeeded President Remsen as Vice-President. Sir James Dewar, F.R.S., Prof. A. R. Forsyth, F.R.S., Prof. D. Hilbert (Göttingen), and Prof. J. C. Kapteyn (Gröningen) have been elected foreign Associates.

Endowments and Benefactions.

The University of Oxford makes an appeal for £250,000, "the pressing needs" being mainly "the promotion of modern studies, literary and scientific, and the provision of funds necessary for the due maintenance of Bodley's Library."

* * *

Birmingham University has received the offer of a clock for the new Bournbrook buildings from the contractor (Mr. Thomas Rowbotham)—say £2,000; the offer of a stained glass window for the great hall from Sir John Holder—£1,000; a collection of fungi and fungus diseases (4,000 to 5,000 species, one to six specimens of each) for the Botanical Museum from a few friends; and a valuable collection of British spiders from the Rev. Owen Pickard-Cambridge, and of Philippine corals and shells from Mr. George Copley, for the Zoological Museum.

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University College, Dundee, has received by the will of the late Miss Harris £700 towards providing Anatomical and Pathological Museums.

* * *

Mr. David Davis has offered £300 a year for two years towards the Mining School, University College, Cardiff.

* * *

Lady Wantage, who has already made generous gifts to University College, Reading, has defrayed the whole cost of the erection of the Lady Wantage Residential Hall for Men—about £26,000.

* * *

The late Mr. Basil McCrea has left £75,000 to Magee College, Londonderry, for the erection of residences for the professors, the further endowment of the existing chairs, and the foundation of scholarships.

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By way of memorial of the late Miss Maitland, Principal of Somerville College, Oxford, it is proposed to raise £2,850 to pay off the debt on the college library and to set free the Pfeiffer Trust money which was diverted from scholarships to the building fund. Subscriptions are received by the London and County Bank, Oxford.

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Sir John Brunner, Bart., has made a gift to Northwich and Cheshire of a secondary school with six acres of land—say £12,000.

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Mrs. Henry Illingworth has commemorated the hundredth anniversary of the birth of her late father, Sir Isaac Holden, by presenting to Bradford a university scholarship of £150 a year, tenable at Oxford or Cambridge by boys from Bradford secondary schools.

* * *

The late Mr. Fowlie, schoolmaster, Inverurie, has left £2,000 for bursaries at Aberdeen University to eligible boys and girls in Inverurie and the surrounding parishes.

* * *

The late Mr. Robert Maclehose, M.A., University Printer, has left his residence (Westdel, Dowanhill) to the University of Glasgow, subject to a life-rent.

* * *

Friends of the late Sir R. G. W. Herbert, sometime Under-Secretary for the Colonies, and Fellow of All Souls, have founded a Memorial Prize at Oxford, to be awarded on the examination for the Beit Prize in Colonial History and on the same conditions.

* * *

The fund to be raised for a memorial of the late Miss Bateson is to be applied as part endowment of a Mary Bateson Fellowship at Newnham College. Dr. Whitehead and Mr. Lapsley, both of Trinity College, are joint Secretaries and Treasurers.

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The Secretary of State for India has presented to Haileybury College the original service of Communion plate made in 1816 for the Honourable East India Company's College, closed in 1858. In 1874 the India Office gave the plate to Coopers Hill, where it was in use until the close of that college.

Scholarships and Prizes.

At Westminster School 5 residential scholarships, 3 non-residential scholarships, and some exhibitions will be awarded by examination on June 26–28. Apply to the Bursar.

* * *

Emmanuel College, Cambridge, offers a choral exhibition of £15 a year to a student commencing residence in October, 1907. Examination June 13 and 14. Particulars from the Master. Also an exhibition, £50 for 2 years, to an advanced student beginning residence at the College in October. Apply to the Master by October 1.

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Worcester College, Oxford, offers an organ scholarship of £60 a year. Testimonials as to character and musical qualifications to Mr. W. H. Hadow, Worcester College, by June 30.

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Birmingham University offers a scholarship in German—£50 for three years—to students entering the Modern Languages School next session.

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The Oxford Delegacy for the Training of Secondary Teachers offers a scholarship of £25 for the academical year 1907–08. Candidates must have taken Honours at a British university. Apply to Miss A. J. Cooper, 22 St. John Street, Oxford, by June 5.

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The Council of the Institution of Civil Engineers invite nominations to the Palmer Scholarship, vacant in September. Nominee must be son of a civil engineer, intending to study for a degree at Cambridge, not necessarily in Engineering. Apply to Prof. Hopkinson, Engineering Laboratory, Cambridge.

Appointments and Vacancies.

Mr. Francis Galton, Hon. D.C.L. Oxon., Hon. D.Sc. Cantab., has been appointed Herbert Spencer Lecturer for 1907. Subject: "Probability the Foundation of Eugenics."

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Dr. Edward Caird has resigned the Mastership of Balliol College, Oxford, which he has held since 1893.

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Dr. Michael Friedländer is retiring from the Principalship of Jews' College, after 42 years' service. He will be succeeded by Dr. Büchler, the present Vice-Principal.

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Mr. Robert A. Falconer, Principal of Pine Hill College, Halifax, has been appointed President of the University of Toronto.

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The Rev. Dr. Marcus Dods has been appointed Principal of New College, Edinburgh.

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Dr. Alex. Hill will resign the Mastership of Downing College, Cambridge, at the end of the current term.

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Canon Masterman will resign the Wardenship of Queen's College, Birmingham, at the end of the current term.

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Prof. Liveing proposes to resign the Chair of Chemistry at Cambridge some time next year. He has occupied it for 46 years.

* * *

Mr. Francis John Haverfield, M.A., F.S.A., Student, Censor, Tutor, and Lecturer, Christ Church, has been elected Camden Professor of Ancient History in the University of Oxford.

Mr. T. W. Russell, M.P., has been appointed Vice-Chairman of the Irish Board of Agricultural and Technical Instruction, in room of Sir Horace Plunkett, resigned.

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The Professorship of Philosophy in the South African College, Cape Town, is vacant.

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The Chair of German in Dublin University is vacant through the death of Dr. A. M. Selss.

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The Professorship of Accounting in Birmingham University (£300) is vacant. Apply to the Secretary by June 8.

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Mr. J. L. Morison, M.A., Lecturer in English Literature in the University of Glasgow, has been appointed Professor of History in Queen's University, Kingston, Canada.

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The Rev. John Oman, M.A., B.D., D.Phil., has been appointed Professor of Dogmatic Theology, and the Rev. C. Anderson Scott, M.A., Professor of New Testament, at Westminster College, Cambridge.

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Mr. Joseph Jones, B.A., B.D. Wales, of Mansfield College, Oxford, has been appointed Professor of Greek in Brecon Congregational Memorial College. Mr. Jones worked for some years in the Aberdare coal pits.

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Mr. T. F. C. Huddlestone, Censor to the Non-Collegiate Students' Board, Cambridge, is to resign at the end of the current term, after 17 years' service.

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Mr. H. Bateman, B.A., Senior Wrangler, 1905, Assistant Lecturer in Mathematics in Liverpool University, has been appointed to the new post of Reader in Mathematical Physics at Cambridge.

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Prof. William Campbell, D.Sc. Dunelm., Ph.D. Col., of Columbia University (formerly a student of the Durham College of Science, now Armstrong College), has been appointed Metallographer to the United States Government.

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Mr. A. D. Imms, of Christ's College, Cambridge, has been appointed Professor of Biology in Allahabad University.

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Mr. Arnold W. Smith, M.A., has been promoted from Assistant Lecturer to Lecturer in English Language and Literature in University College, Cardiff.

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A Reader in Forestry is to be appointed at Cambridge University (£400 a year). Apply to the Vice-Chancellor by July 15.

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A Teacher of Bengali is required by the Special Board of Indian Civil Service Studies, Cambridge. Apply to the Secretary by July 20.

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Mr. W. H. Broad, M.B., Ch.B., has been appointed Lecturer in Physical Anthropology in Liverpool University.

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Mr. Arthur Holden, B.A. Cantab., Lecturer in Mathematics at St. Mark's College, Chelsea, has been appointed Assistant Lecturer and Tutor in Mathematics in Sheffield University.

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Mr. Frank P. Walker, B.Sc. Edin., has been appointed Lecturer in Agriculture in Armstrong College, Newcastle-

on-Tyne, in succession to Mr. Bryner Jones, B.Sc., recently appointed Professor of Agriculture at Aberystwyth.

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Mr. A. B. Keith, M.A., has resigned the Lectureship in Ancient History in Edinburgh University, to which he was recently appointed.

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Mr. George A. Carse, M.A., B.Sc., has been appointed University Lecturer and Assistant in Natural Philosophy in Edinburgh University, in room of Dr. William Peddie.

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The Rev. J. P. Faunthorpe, M.A., is resigning the Principalship of Whitelands College, Chelsea, which he has held since 1874.

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A Junior Demonstrator in Physics is required at Bedford College for Women (University of London) (£75). Apply (women only) to the Principal by June 19.

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The Wardenship of the Hall of Residence for Women Students at Liverpool University will be vacant in October. Apply to the Secretary, 4 Abercromby Square, Liverpool, by June 15.

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Mr. R. J. McAlpine, B.A. Liv., has been appointed an Assistant Inspector of Schools under the Liverpool Education Committee.

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Mr. Robert J. D. Graham, M.A., B.Sc. St. Andr., has been appointed to the Indian Agricultural Service at Pusa (Bengal).

* * *

Mr. Arthur N. Worman, B.A. Lond., assistant master, King Edward VII. School, King's Lynn, has been appointed Head Master of Horncastle Grammar School, in succession to the Rev. Arthur G. Madge, M.A., LL.D. Cantab., resigned.

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Mr. Charles Lowry, M.A. Oxon., Head Master of Sedbergh School, has been appointed Head Master of Tonbridge School, in succession to the Rev. Canon Tancock, D.D., resigned.

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Father Bodkin, S.J., Principal of the Jesuit College for Boys, Leeds, has been appointed Rector of Stonyhurst College.

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The Rev. A. D. H. Allan, M.A. Oxon., assistant master at Reading School, has been appointed Head Master of Wimborne Grammar School.

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Mr. A. F. S. Caldwell, M.A. T.C.D., Head Master of Daventry Grammar School, has ben appointed Head Master of Sligo School.

* * *

Miss Leahy, Principal of the Grey House School, Redcar, has been appointed Head Mistress of the new Secondary School for Girls, Saltburn.

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The post of Assistant Lecturer in the Day Training Department of University College, Bangor, is vacant. Apply to the Secretary by June 8.

* * *

The Oxford Committee for the supervision of instruction in Geography has made the following appointments for 1907–9:—Lecturer in Ancient Geography, Dr. Grundy, Fellow of Corpus; Lecturer in the History of Geography, Charles Raymond Beazley, M.A., Fellow of Merton College; Instructor in Surveying, Nicol Finlayson MacKenzie, M.Inst.C.E.; Demonstrator in Geography, Nora Eileen MacMunn.

Literary Items.

Among new school books announced by the Oxford University Press for publication immediately are Kingsley's "Westward Ho!" with introduction and notes by A. D. Innes; Scott's "Legend of Montrose," edited by G. S. Gordon; Aeschylus's "Agamemnon" in Conington's translation, and "Prometheus" translated by R. Whitelaw—additions to the Greek drama for English readers edited by J. Churton Collins; the third volume of the "Oxford Geographies"—the "Senior Geography," by A. J. and F. D. Herbertson; "Selections from Hakluyt" (illustrated), edited by E. J. Payne, with additional notes and maps by C. Raymond Beazley.

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Messrs. George Philip & Son's Catalogue of Pictures and Diagrams for Object Lessons and School Decoration presents an extensive, varied, and valuable series of illustrative materials.

General.

The Prix Allier de Hauteroche has been divided by the Académie des Inscriptions et des Belles Lettres between Dr. George Macdonald, Assistant Secretary, Scotch Education Department (for his "Catalogue of Greek Coins in the Hunterian Collection of the University of Glasgow") and one of the editors of the "Corpus Nummorum" in course of publication by the Royal Prussian Academy of Sciences.

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The subjects for the Cambridge University Local Examination to be held in July and December, 1808, are now issued.

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The Rhodes Trustees have made a grant of £100 to the Council of the League of the Empire towards the expenses of the Federal Conference on Education.

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Five lady teachers have been elected as deputies to the new Parliament in Finland.

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It has been decided that the memorial to the late Miss Dorothea Beale, LL.D., is to take the form of (1) a tablet to be placed within the Cheltenham Ladies' College, (2) a monument in the Lady Chapel of Gloucester Cathedral (where she is buried), and (3) a fund for the benefit of members of the staff, past or present, and of old pupils that may be in special need. Already over £1,200 has been subscribed. Further subscriptions to Miss Agatha Leonard, Ladies' College, Cheltenham, or to Lloyds Bank at Cheltenham or at 16 St. James's Street, London, S.W.

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The Workers' Educational Association is working out a scheme for sending working men of promise to Cambridge for a twelvemonth, or, where that is not feasible, for week-ends at colleges.

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The University of New Zealand has instituted the degree of "Bachelor in Original Research," requiring a three years' course. Candidates must pass examinations in the subjects or departments they take up, and in allied subjects as well, in the first two years; in the third year they are free to specialize, and to write a thesis dealing with some special work, on which the degree is granted.

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The New York Senate has passed a Bill equalizing the salaries of the women teachers of the State (11,000) with those of the men teachers.

THE TEACHING OF THE MOTHER TONGUE.

At the Evening Meeting of the members of the College of Preceptors on May 8, Prof. Adams in the Chair, the following address was delivered by Mr. P. J. Hartog, B.Sc., L.-ès-Sc.:—

English Teaching in English Schools.

It is rather remarkable that in the schools of this country, and particularly in those of a secondary character, the teaching of English is still in its infancy. Of late years in the elementary schools a considerable amount of attention has been given to this subject, but in the secondary schools a beginning is only being made. Many of the teachers in those schools regard the teaching of English as unnecessary. They believe that in some mysterious way a knowledge of English will be acquired by the ordinary process of living, and that in particular the indirect teaching which comes with the correction of ordinary exercises, translation, and the rest is sufficient for the study of the mother tongue. We are continually reminded that the work done in connexion with the classics cannot fail to give to the ordinary school-boy a facility in writing good English.

While this is the general impression, it cannot be denied that, on the other hand, there is a growing feeling that the results in the matter of English composition are not what they should be. The Head Master of Charterhouse has recently told us that the general English standard of writing is so low that the language is unsatisfactory for school purposes. But the vast majority of boys leaving public schools with all their exercises in translation from Latin and Greek and French and German cannot reach even the confessedly low standard of being able to use their own language as a means of communicating accurately with their fellows. It may be said that such boys cannot write English at all. The Board of Education blue book on Preparatory Schools, the Departmental Report on Military Education, the Edinburgh Report on Commercial Education, and the recent articles by "Some Oxford Tutors" published in the *Times* bear witness to the fact that the English boy cannot express himself in English, the English clerk cannot write a business communication, the English officer cannot give his military instructions in plain and satisfactory language. I was told quite recently by an English general officer in high command that hardly any of the officers in his division could write a passable letter in English.

English Teaching in America.

It is interesting to turn from our own country, where the study of English as such is unusual, to the United States, where a considerable amount of time is spent on this subject. In the States a very large number of books and essays have been published on the teaching of English in the public schools. Most of these books are by well known scholars, and contain suggestions which the English schoolmaster cannot afford to neglect. But considerable hesitation must be felt with regard to following those suggestions without the most careful investigation. The first question that we may ask is this: Is the result of the teaching of the mother tongue in America good? To this question Prof. G. Stanley Hall, the President of Clark University, one of the leading authorities on American education, replies in the negative as follows:—

By general consent both high school and college youth in this country (the United States) are in an advanced state of degeneration in command of this, the world's greatest organ of intellect, and that despite the fact that the study of English often continues from primary into college grades, that no topic counts for more, and that marked deficiency here debars from all other courses. Every careful study of the subject for nearly twenty years shows deterioration, and Prof. Schurman, of Nebraska, thinks it now worse than at any time for forty years. We are in the case of many Christians described by Dante who strove by prayers to get nearer to God, when, in fact, with every petition they were departing further from Him. Such a comprehensive fact must have many causes. . . .

The causes enumerated by Prof. Hall are as follows:—

1. The excessive time given to other languages.—"It is a psychological impossibility to pass through the apprenticeship stage of learning foreign languages at the age when the vernacular is 'setting' without crippling it." "The psychology of translation [Prof. Hall refers here especially to translation from Latin] shows that it gives the novice a consciousness of etymologies which rather impedes than helps the free movement of the mind."
2. The subordination of literature and context to language study.
3. The excessive use of writing in school, as compared with the use of speech.
4. The growing preponderance of concrete words for designating things of sense and physical acts over the higher element of language that names and deals with concepts, ideas, and non-material things. The object-lesson came in as a reaction against the danger of merely verbal and definition knowledge and word-memory. Now it has gone so far that not only things, but even languages, vernacular and foreign, are taught by appeals to the eye. . . . In modern pedagogy there is an increased tyranny of things, a growing neglect or exclusion of all that is unseen. The first result of this is that the modern school child is more and more mentally helpless without objects of sense. . . . Many pupils have never in their lives talked five minutes before others on any subject whatever that can properly be called intellectual. It irks them to occupy themselves with purely mental processes, so enslaved are they to what is near and personal; and thus they are impoverished in the best elements of language." *

Comments on Prof. Stanley Hall's Views.

Let us take these four points *seriatim*:—

1. I find it difficult to regard this as a *vera causa* except in so far as foreign languages tend to crowd out English from the time-table; but this is not the case in American schools.
2. It is sufficient to remark under this head that this cause is equally operative in England.
3. With regard to the third point, it is noteworthy that what strikes most Englishmen in coming into contact with Americans is a marked superiority in power of speaking which contrasts with a relative deficiency in the power of writing.
4. This criticism is difficult to understand without a closer knowledge of American practice than can be obtained from books. It certainly does not apply to the pupils in the highest forms of an English, a French, or a German school, whose main defect is a tendency to second-hand generalization, combined with an inability to present their own experience in clear and logical form. The state of things described by Prof. Hall as existing in America and the state of things existing in Europe seem to lie at the opposite extremes.

I trust that it will not seem ungracious to concur in Prof. Hall's unfavourable criticism of the teaching of English in his own country, but we in England in making new experiments are in duty bound to watch with especially critical eyes the experiments of another people using the same language. Now it is obvious that, while we recognize a marked superiority in the average prose of the French work over that of the average English writer, we can recognize no such superiority on the part of the American writers. Of recent years the American learned book has shown a perilous tendency towards the involved periods and the dryness of statement and method characteristic not of the best, but of the average, German practice, a result, no doubt, of the close intercourse between German and American Universities, to which the latter are so greatly indebted in other ways. In the American school essays sent over to the Paris Exhibition of 1900 I found faults of a different kind. I was struck by the excellence of the ideals as set forth by the plans of the teachers and the painful inability to realize them shown in the work of their pupils. Many of the model exercises showed the most marked tendency to "high falutin'" and verbiage and inconsequence. Possibly the dryness of academic writing is due to a revolt from the exuberance of such school performances.

It is clear evidence of the inefficiency of school teaching that students in the Faculties of Science and Economics, as well as those in the Faculty of Arts, of many American Universities are required to attend classes in English composition. This, no doubt, is a better state of things than exists at present in England, where the inefficiency of school-teaching is glozed over; but it makes us pause in taking our models from American school methods. The school years should certainly suffice for the teaching of composition.

As soon as we pass from the region of spelling, punctuation, and grammar to that of thought training we see that the problem of teaching the mother tongue in England is a very different one from the problem in the United States, where the whole social and political atmosphere is different. Where our great need is to encourage individuality and freedom in thinking and action, and to get rid of the fetters of traditional methods of teaching, it may be that the children in the United States need fresh discipline and restraint. In the view of Prof. Hall that restraint is already overdone in some respects, Dr. Hall informed me in conversation during a recent visit to England that most Amer-

* "Adolescence . . . its Psychology and its Relation to . . . Education." By G. Stanley Hall. 2 vols. Vol. II., page 457. (London: Sidney Appleton.)

ican children, as a result of their training, rush into an excess of slang after leaving school. Possibly the restraint may be chiefly exercised in the "paragraph-writing" which forms a marked feature of American practice. It seems to me that when once a child can write a paragraph he should pass at once to the treatment of a subject as a whole. Paragraphs should be subordinated to general treatment and not regarded as independent units. (Obviously this view would not preclude the teacher from asking his pupils to rewrite a paragraph occurring in a complete composition.)

Practical Inquiries and Experiences.

Turning now to my own experience of French University life, I found that the average French student—not to say the average French schoolboy—was in respect of his mother tongue on an altogether different and higher plane than seems to be the case in either England or America. When I began my study of this subject I knew somewhat vaguely that French schoolboys were taught "to write," and I decided to take the first opportunity of seeing how this was done by spending a fortnight in French schoolrooms. I found my surmise to be correct. The French boy learns to write clearly and connectedly, not because clearness and continuity are qualities specially characteristic of the French mind, as is sometimes supposed, but because he has been taught to do so with considerable expenditure of time and immense expenditure of trouble on the part of both teacher and pupil. I found that the methods used are largely traditional: in the direct teaching of French composition it is rare indeed to find a book of any kind used. I then set to work to discover why French was taught as French, and why it was taught in a particular way in French schools, while the teaching of English has hardly yet found its way into English schools.

I next desired to make certain experiments in the actual teaching of English in which I could apply the French methods in dealing with English pupils, and see how far success in the French schools was due to the method employed. For I had the impression that, admirable as the French method is in many ways, it was too "literary" for application to ordinary life. I obtained my experience from dealing with a class of working men for two years at the Ruskin Hall, in Manchester. During the second of those years I also took charge of a mixed class of children from eleven to twelve at the Owens College Practising School. Further, I made occasional experiments in five or six other schools to settle doubtful points. Nor did I rely entirely upon my own experience. The present Head Master of Eton, while at Haileybury, asked me to discuss the question of the teaching of English with his staff, and, as a result of that discussion, the teaching of English composition was introduced right through the school. I believe that he has carried out reforms on similar lines at Eton itself. I have also been able to get other teachers to put into practice in their schools in various parts of the country the method of training in expression in the mother tongue of which I propose to give an outline to-night.

English Schoolmasters Unconvincible.

Having thus shown that I have treated the matter from a very practical standpoint, I may be permitted to drop into theory for a moment on the way to an account of my actual experience. It is admitted that the mother tongue was taught in the schools of Greece and Rome. It cannot be denied that the mother tongue is regarded as one of the most important subjects in every other European country and absorbs many hours of the school curriculum. It may well be asked then how this strange neglect has arisen in our own country. The question opens up a problem in educational history that is not altogether solved.* Across the Channel we know that the mediæval teaching of Latin as a living language, revivified by the influence of the Jesuits, led directly in the seventeenth and eighteenth centuries to the literary teaching of French, first in the schools of the Oratory and Port Royal, and later in the lay schools. It can, I think, be shown definitely that it was this teaching that made of French prose style a style unrivalled in modern times. In England we had no Jesuits in the seventeenth century and no Port Royal. The teaching of Latin composition was held up to scorn by John Locke so effectually in 1693 that he seems to have killed it altogether (for what we now call Latin composition is, of course, mere translation into Latin); and Locke failed to introduce into the place of Latin composition the teaching of the mother tongue for which he pleaded with a common sense that did not touch the schools. Mulcaster and Brinsley, we know, had failed in a similar attempt before. Where Englishmen failed it was hardly likely that the works of great foreign reformers like Ratke and Comenius would exert a stronger influence on England. The English schoolmasters have, with few exceptions, been resolutely unconvincible in this matter so far.

Students unable to say what they mean.

I must confess, however, that my interest in the teaching of English did not arise from historical or philosophical considerations, but from practical experience as teacher in an English University. I found that many of my students were incapable of expressing accurately what they had to say on the subjects which they were studying in my classes. I had to deal with chemical analysis in the laboratory, and also with some of the more difficult parts of the history of chemical theory. My students showed incapacity of expression in two ways, which from the educational and philosophic point of view it seems of real importance to distinguish clearly. The one has to do with expression as such, the other with expression in relation to obscure and inaccurate thinking.

It is common to find students who cannot put down on paper for the information of another, or as a record for their own future use, an intelligent account of the experiments by which they may succeed in solving, say, a fairly complex problem in chemical analysis. In many such cases I have been able to satisfy myself that the incapacity of expression did not imply incapacity of thought. Max Müller has written a book to show that we cannot think without words. If he were right, the problem of training in the mother tongue and the problem of thought-training would be identical. But I feel convinced that his view is an exaggerated one. The fact that an illiterate mechanic has before now devised elaborate machinery which he would have been totally incapable of describing in words is a case which, I think, ruins Max Müller's generalization. The case of my own students, successful in analysis (and they were no mere rule of thumb workers), but incapable of describing in words their successful reasoning in images or things, is no less to the point. Nor could one deny to the great painter, sculptor, or musician the faculty of being able to think out, without words, a great work.

But, while it may be possible to think accurately and yet be incapable of expressing the thought, the most common case is that in which expression is bad because thought is obscure. When, for instance, the students to whom I have referred had to criticize some complex piece of chemical theory they invariably wrote down prose that was totally unintelligible. On being pressed, they frankly admitted that they "hadn't said what they meant," but, since there was here no laboratory test, it was impossible to discover what they really did mean. They could learn to repeat an argument, but they had not a sufficient control over their mother tongue to make it clear to another that they understood a complex problem.

Training in English needed.

It is not enough to say that what such students require is a little training in Latin or Greek; or even that French or German would do, at a pinch. What is needed is training in the mother tongue. The average boy at the age of, say, eleven has already a considerable vocabulary and technical mastery of the mother tongue—in speech, if not in writing. Though he may be totally ignorant of the rules of grammar, he has the power of saying accurately *what he needs and wants to say* in the language in which he thinks. He is quite capable, with a little help, at that age of beginning to explore and develop and stimulate his own thought by observation and reflection in his mother tongue. He has the free play of a very large part of his mental faculties. In the study of a foreign language he applies those faculties over a very limited range. However important the problems of linguistics may be, they form only a small portion of the general problems that present themselves in life.

It is true that the disciplinary value of the classics is still emphasized by schoolmasters; but we know that the teaching of Latin comes from a time when Latin was used as a real substitute for the mother tongue, and was therefore a living language. Its disciplinary function is a mere remnant, left when Latin ceased to be used as a means of communication. I do not want in any way to belittle the utilitarian or disciplinary uses of foreign languages, ancient or modern. They have, at any rate, one fundamental use in enabling children to distinguish between

* I have given further details in an article on "The Teaching of Style in English and French Schools," in the *Fortnightly Review* for July, 1902.

words and ideas, since the same idea is rendered in different languages by different words. But the teaching of a foreign language cannot replace the teaching of the mother tongue: they differ in kind.

The Standpoint of the Pupil.

In teaching the mother tongue so as to produce the power of using it intelligently everything depends upon the point of view adopted by the teacher and by the pupil in this work. It may be objected by the teacher who has listened so far patiently to this complaint about the lack of definite teaching of the mother tongue that I am surely forgetting the essay that forms such an important element in our school work. But no one who is familiar with the subjects of the essays formerly universally set, and still too frequently set, even in our best schools, will seriously maintain that in essay writing the pupil can adopt the proper point of view. Out of his limited knowledge he sets forth facts for the consideration of a person who is by hypothesis his superior both in knowledge and in power of expression. Nothing could be more unnatural or harmful to true progress in the power of expression. The pupil should always write about things that are better known to him than to the person for whom his composition is intended. It may be asked how this can be brought about in the case of a pupil writing for his master. The answer is simple. The boy's point of view is his own, and is better known to him than it can be to his master. The boy's reaction upon the material presented to him ought to be the substance of the essay. Further, much of the matter of a description may be quite new to the master, even though the master be infinitely better able than the boy to use that or similar material to the best advantage in an essay. The mistake we are constantly making is to test everything from the master's point of view. In the ultimate resort each boy must be the final judge of the value of what he has done, He must learn to work so as to satisfy not his teacher, but himself. It is the business of the teacher and of the class to make that standard a high one. This ideal of self-judgment is absolutely opposed to the mediæval ideals. Authority has a place, and a large place, in education; its place has hitherto, I believe, been too large a one. In this particular work it is the child's own judgment that must be made supreme. His original effort to produce is to be controlled and guided by self-criticism. The aim of a teacher is to cultivate what I will call the "intellectual conscience."

The Standpoint of the Teacher.

It does not, of course, follow that the pupil is to be allowed to write nonsense without criticism. There is room for the teacher's intervention, but it ought to be regulated by a recognition of the right of each child to an opinion of his own in dealing with his subject. If the subject has been properly chosen, it is within the range of the pupil's knowledge, and he is therefore entitled to express his views on it: he will be saying something that he himself has thought out, not telling the teacher what the teacher already knows. The master's task is to see that the pupil earnestly tries to express himself. The pupil's work ought to have intrinsic as well as disciplinary value. The guidance that the teacher can give, inestimably helped by the public opinion of the class, must be of the gentlest and most tactful kind. It is the training of a growing plant that is needed, not the hammering of a piece of metal with a sledge hammer. If the child says: "I think this," the teacher's limit of objection must be to say: "Very well; I don't agree"; not "You are wrong." That would simply tend to crush the initiative you wish to stimulate. "Experto crede." Teaching of this kind is a wonderful training of the teacher in humility, and in a kind of humility which, I think, he will not regret in the end. He will acquire a knowledge of the workings of the child mind hardly to be reached in any other way.

A First Lesson.

To give point to these principles let us consider the case of a first lesson with a class about to be treated in accordance with them. The teacher faces his class and tells the pupils that he is about to tell them a story that he wants them to tell him back again—not as he tells it, but in a particular way. Now we never tell a story "in the air." We always tell it to please, or interest, or influence some particular hearer. We will take as our hearer for this story a younger brother on whom we wish to impress the desirability of being in time for school. This is the story: "A boy gets up late, hurries over his breakfast, runs off to school, and on the way drops his reading-book in the mud. The wheel of a cart goes over the book and spoils it. When the boy reaches school the master asks him why he is late. He replies. The master then asks him for his reading-book, and he tells the whole truth. The master tells him that his parents must buy him another book. The boy is sorry, as his parents are poor, and cannot well afford it."

The problem is now put to the class whether the story thus told would interest the imaginary listener or not. As the result of very many trials I find a great preponderance in favour of its being dull. In the few cases in which it was regarded as interesting the voters were described by their teacher as being themselves rather dull. To be sure there is the usual difficulty in the case of the girls to get them to say what they really think rather than what they think will please the teacher.

The next step is to inquire how the story can be brightened up. It is rather surprising that it is almost invariably suggested that the story should be made real. The trouble begins when it is asked how to make it real. But a little patience brings such suggestions as to give the boy a name, to make the incidents happen in a town known to the younger brother. Very soon the class comes to the conclusion that what is wanted is "to say how it all happened." Here the device (first, I believe, worked out by the Abbé Grégoire Girard, and used by many teachers in elementary schools) comes in very usefully—the device of setting the young writer to ask himself questions about the incident, and let the answers make up the story.

At this stage the teacher should drop the subject for a time. To go on getting further verbal matter in the way of sentences from the pupils is to defeat the whole purpose of the lesson. The seed has been sown—it must be allowed time to germinate. If the story is to be good, it will take time. It is to be handed in after four or five days, and in the meantime the pupils are to be thinking about it.* Then a rough copy is to be written. This is to be improved as far as possible, and, finally, a fair copy is to be made. The class is made to understand quite plainly that the work cannot be polished off in twenty minutes, and that the actual writing, if done properly, will probably take not less than an hour and a half.

The time devoted to the first lesson as described should not exceed ten minutes or a quarter of an hour. It should be followed a week later by the criticism lesson. It was only after considerable trial with my adult class at Ruskin Hall that I found what seems to me the most satisfactory form of this lesson. An experienced teacher may, no doubt, improvise a criticism lesson; but, to get the best results, the exercises should be handed in a day before the lesson, and the teacher should read them carefully, choosing seven or eight typical ones to deal with in class. On the rest I would advise the teacher to make only the briefest of written comments. There is no more shocking or exhausting waste of a teacher's time than that devoted to red-ink corrections not dealt with in class.

Criticism of a Composition.

Having determined the general character of the lesson (though with a mind fully ready to change under the stimulus of events), I face my class once more. I ask the author of one of the selected exercises to stand up, and then to explain exactly and fully what it was he was asked to do. He knows what he has to say, and can with a little encouragement say it just as well as the French boy or the German boy or the American boy. Self-consciousness in speech disappears astonishingly quickly when a boy or girl really has something connected to say, and when you make it plain that this is not "showing off," but part of the everyday business of school work. I next read this pupil's composition aloud as well as I can. I especially want to direct his attention, and the attention of the class, not to small faults, but to the general construction and sense of the composition. This is all-important. I even go so far on a first reading as actually to amend, without drawing attention to them, faults of grammar that would take the attention of the class from the sense and continuity of the composition. All my indignation at misplaced commas and errors of spelling I keep to myself. They are trifles compared to the business in hand. When I ask the pupil if he thinks his composition a piece of good work, I usually get either an evasive answer or no answer at all. Coming to closer quarters, I ask: "Is the work as well done as you could have done it?" "If it is not, how could you have improved it?" Then we come to one question never to be omitted: "Is the work good *as a whole?*" With a first exercise one generally gets the frank and

* Prof. Adams suggests that, if they care to experiment with their younger brothers, so much the better.

striking criticism that the end is too short for the beginning. The effort has "tailed off." It is a first lesson in the architecture of style and is never forgotten. Children have a sense of proportion that only needs exercise: they perfectly well understand working to a plan.

After getting the author's criticism on his work as a whole, I ask the class for their criticisms on it also as a whole; then I ask for criticisms of detail—common-sense criticisms as well as grammatical criticisms, criticisms of praise as well as of blame. I generally read over a small passage containing either something good or something bad, but without a hint as to which, and ask for opinions on it all round before giving my own. One often gets excellent criticisms volunteered. For example, in one of the stories it was "one of the maids" who wakened the lazy boy. Objection was at once taken to this on the ground that, if the parents could ill afford to buy a new reading book, they would not be able to keep servants. Many of the stories began, after the pattern of the story-book: "It was a bright sunny morning." In almost every class some pupil was found who pointed out that, if the roads were muddy, it had probably been raining, and that the chances were that it was a dull day.

It will be noted that what is called the subject-matter is allowed to be of first-rate importance. Teachers sometimes impress upon their pupils the comparative unimportance of the mere matter. The thing that counts, according to them, is the form. Nothing could be farther from the truth. In a certain district, I am told, the school inspectors hit upon the plan of omitting the title of the story they read at the school inspection for the pupils to reproduce, and of making the pupils supply an appropriate title. The teachers, as was only natural, adopted the practice—with the best results on the composition. The pupils were by the circumstances of the case driven to consider the subject-matter as of importance. They for a time forgot the rigid demands of the comma and the quotation mark, and their minds had a chance. A girl of thirteen who invents for a picture of a sunset the title "Facing the West" shows a power of expression that can hardly fail to make itself apparent in her description of the picture.

The Meaning of Words.

When some practice has been given in narration and description there arises the need for more precise teaching regarding the meaning of words. This does not mean that the pupil is suddenly to give up attending mainly to the subject matter and turn to the consideration of words. He cannot deal satisfactorily with the subject matter at any stage without discriminating among words. But a time comes when he may safely attend to the word more in detail, since he has already acquired a *feeling* of its meaning. What is wanted at this stage is a clearing up of slight overlappings in meaning. It has to be noted that there is to be exercise in the exact use of words without any reference to translation. The illustrations can be best drawn from the pupils' own compositions. I ask my class not to define, but to discriminate between, words closely allied in sense, such as "fast," "swift," "rapid"; "friend," "comrade," "companion." This kind of exercise I have found not beyond children of twelve, and yet sufficiently hard for the adult teacher. The ordinary dictionary is often useless, and may be worse than useless, in the preparation of a lesson of this kind. Nothing less than Murray is of much real help; or, when the words are common to English and French, the "Hatzfeld-Darmesteter Dictionary." The inexperienced teacher may perhaps be warned that within the last few years the problem of the development of word meanings has received considerable attention from linguists like Darmesteter, Bréal, and others, and that writers on "semantics" (as the new science is called) are safer guides than writers on "style" with a partiality for archaisms.

Some teachers may be inclined to ask, with regard to all that has gone before: "Is this the teaching of English, in the ordinary sense, at all?"—"Will verbs and numbers come right; will conjunctions and prepositions and adverbs find their proper places?"

My answer to the second question is that I have found that they do in a way that is surprising. I myself sometimes asked the children to correct grammatical mistakes. I never, or rarely, gave grammatical rules. These are lessons in thought-training, not in grammar—still less in spelling or punctuation. My experience may be summed up in a maxim: take care of the sense and the sentence will take care of itself. Of course, dictation lessons and lessons in punctuation have their place; but we must not put the big things and the little on the same plane.

Sterilizing Influences.

The teaching of English is, then, not one among many in the activities of the schoolroom: it is of fundamental importance; it dominates thinking as well as expression; it ought to ensure the development of that intellectual initiative that is so necessary at the present day and that our schools do not seem to cultivate.

Sir Oliver Lodge tells us that "by some process" the "eager and inquiring child is turned by present-day education, or turns himself," into "the intellectually dull, apathetic, indolent, professional schoolboy," and Mr. A. C. Benson compares the sparkling stream of eager little boys entering a public school with the slow river leaving it of boys devoid of all intellectual interest. Those who think the condemnation too sweeping should look at certain facts that cannot be denied or ignored. It is, I believe, universally admitted that there is one organized body of men who, taken as a whole, are superior in resourcefulness and efficiency to any other in the country. I mean the officers of the Navy. Now I understand that the regulations limiting the age of entrance to the Navy in the past (and they have lately become more stringent) have made it impossible for any naval officer to have passed through a public school. Is it not a very grave indictment against our present secondary education that it is among the men who have not been submitted to its influence that we find the most efficient and resourceful body in the country? Does not this suggest that the influence of the secondary schools of to-day is, for many of their pupils, a sterilizing influence?

Development of Initiative.

The problem of the teaching of the mother tongue is, I repeat, not one among many. English is not one of a crowd of subjects in the curriculum, but is really implied in all the other subjects. There is a much closer relation than is sometimes supposed between the mastery of the mother tongue and the general mental vigour of the pupil. The ever increasing demand for initiative on the part of our citizens may, I believe, be best met by such a training in the use of the mother tongue as I have suggested to you to-night. The influence of examinations, however necessary and in some ways valuable we may admit them to be in some respects, has tended, and must almost necessarily tend, to crush the development of initiative. It is well, therefore, that we have in our hands so powerful an instrument for counteracting that influence as the rational teaching of the mother tongue.

A vote of thanks to the lecturer concluded the proceedings.

WILLIAM DOVE: A PRIVATE-SCHOOL MASTER.

By H. Holman, M.A., H.M.I.S.

II.

The Making of Character.

Above all things William Dove seems to have striven to develop a good and manly character in his pupils. As one of his pupils says, he dealt with the boys on the principle that where there is no confidence there is no breach of trust. He gave them large responsibilities in order that he might develop in them a high sense of duty and of honour. As is stated in the school prospectus: "Corporal Punishment is avoided. All complaints and offences are examined and tried weekly by a jury of Pupils. The jury and foreman are elected by their fellows, under the presidency of the Principal."

To be elected to the jury was, very rightly, considered a high honour and proud distinction, and was officially recorded on a legal-like paper in these words:

This is to certify that Master was elected by his fellow Pupils as one of the jury or committee men, to try all offenders, and to regulate and order all matters concerning the Band, Gymnasium, Cricket Club, and general amusements in this Establishment, and that he held his office for months, during which time he discharged his duty with credit, and to the entire satisfaction, not only of those who elected him, but also of

Your very obedient and humble Servant,

Wm. Dove.

One of the older pupils briefly describes in the school magazine the meeting of the jury. He says that the

Principal assembles the pupils from 7 to 8 o'clock every Wednesday and Saturday morning; for the purpose of reading the Masters' and the Officers' Reports, upwards of 40 in number, and making observa-

tions on the affairs of the College, &c. Then all the pupils indicted for misconduct, or any offence, are called on the platform, and punishment awarded to them by a Jury, consisting of twelve of their fellow pupils. Every case, trivial or grave, is referred by the Principal to an example of business-life, and its tendency therein fully shown and commented upon. This being done, he then makes a short harangue to the students, exhorting them to persevere in their studies, to exert themselves to the utmost in the acquisition of useful knowledge, to acquit themselves like men, to work with unflagging energy, and thus be prepared to do their duty in their vocation.

This extract shows us what is meant by the entry on the time-table which refers to the Principal's work.

A pupil, referred to above, informs me that each boy conducted his own case, and called his own witnesses. Jurymen were at liberty to ask any questions they wished. The most usual forms of punishment were: drill, in sight of the other boys and while they were at play, and running the gauntlet (this for the worst offences, such as stealing). He speaks of the Principal's talks to the assembled school as consisting of good wholesome advice, which was much appreciated by the boys. Whenever there was a personal difference between a boy and a master, the latter wrote a report of the matter to the Principal. Mr. Dove always acted as judge at the trials, and gave sentence, after the jury had delivered its verdict.

The principle of mutual self-government—to use a mixed metaphor—was carried out in a very thorough manner. The following pupil-officers were appointed by the Principal:—Banker, cashier, secretary to the pupils, librarian, general inspector, outdoor inspector, indoor inspector, secretary, and treasurer to the cricket club. There were also the president and vice-president of the dining-room, carvers and assistant carvers, chairmen of pupils' sitting-rooms, and a council. The drill master appointed a colonel, major, adjutant, captains, and lieutenants. The music master appointed a leader of the singing class, pianist, and leader of the band. There were also a class timist, whose duty it was to ring the bell for changes of lesson, &c., and a postmaster, who had to fetch and distribute letters.

The banker and the cashier worked together. They received all moneys the boys chose to give them at the beginning of a term. Through them the boys received their weekly allowances from parents, and any part of their previous deposit on receipt of a written demand. The general, indoor and outdoor, inspectors had to keep a constant watch over the premises and to report to the Principal whenever repairs were needed. The outdoor inspector had to supervise the morning toilet of the boys. The president and vice-president of the dining-room had general charge of the order during meals, and it was their duty to report any complaints about food, &c. No masters were present during meals.

There was a king of the school, appointed by the Principal on the recommendation of the masters. His selection was determined chiefly by his character, age, time at the school, and influence with the other boys. All applications for leave of absence had to go to the Principal through him.

No roll-call was used. The boys assembled in companies and were marched into meals. The captains were responsible for their companies being complete. The only other check used was by the sounding of a big bell—the sound of which could be heard a mile away—once or twice a term, and requiring every boy to assemble at the school within a quarter of an hour.

A passing evidence of the results of these conditions in producing real character is given at one of the annual examinations and prize distributions. On December 20, 1856, M. Jancowski, of York, was presenting a prize, given by himself, for general attainments, when the following incident occurred—as reported in the *Halifax Guardian*:—

Master George Emmerson was called up to receive this prize; but Master Emmerson said the prize did not belong to him, and his fellow-pupils confirmed him in this frank admission. . . . Master George Lord was then called up, and to him M. Jancowski presented the first prize for general attainments, it being declared by the whole school to be his due.

The high value of physical exercises was fully recognized. In the prospectus it is stated that:

The Pupils (unless physically incapable) are required to be thoroughly drilled in military movements, as the bodily vigour thus acquired transfuses itself to the mind, and the habits of discipline, inculcated by their being always under proper command, exercise a potent influence on character, by promoting order and obedience.

The usual school games were played. The school had a large and well equipped gymnasium; a covered playground, 82 feet by 30 feet (warmed by hot-air pipes); and three open-air playgrounds, the smallest of which was two acres in area. A small boy of twelve years of age, who describes, in the college magazine, these provisions for physical culture, may well say: "It will thus be seen what a vast scope we have for sport and pastime, by which the mind is relieved and the body strengthened."

If we must have prize schemes, it is at least as well that their influence should be such as to make a boy strive to rise above himself, rather than beat his companions, in learning and morals. The very generous scheme at Making Place Hall seems to be grounded largely on this principle. Every boy could gain some kind of reward for good work, and the better the work the bigger was the prize. Prizes amounting to the value of £100 were awarded each half year. Prizes ranging from 2s. to £5 in value were given, according to the marks obtained by a boy for work, industry, and good conduct. The masters were not left out in the cold; for two gold medals, of the value of £5 each, and two silver medals, worth £1 each, were given to those who proved most successful with their pupils.

One prize that was given deserves special notice—viz., "the best-beloved prize." This was given to the boy who was most beloved of his companions. It was awarded according to the votes given by the boys themselves. An old boy affirms that this was a genuine affair, and that no boy who was not a general favourite with his fellows had any chance of securing the prize.

That nothing might be left to chance, even under so good a system, there was in the establishment "A GENTLEMAN who acts as Steward, and whose chief business is to superintend the manners and deportment of the boys generally, and more especially in the dining-room."

Certificates, signed by the Principal, examiner, and masters, were given to pupils of studious habits and exemplary conduct. These were on official paper and in these terms: "We, the undersigned Principal and Masters, have great pleasure in bearing Testimony to the exemplary conduct and studious habits of Mastr. ———."

Truly Mr. William Dove was a man high-minded and clear-headed to an unusual degree, both in his views of the practical principles of education and in his means of realizing them.

Some other Interesting Details.

The school building was on the class-room system, so that

Each Master has a separate class-room, and the general organization is so complete that, when in actual operation, the College resolves itself into so many distinct schools—the whole machinery being, by a judicious arrangement, under the private surveillance of the Principal and the Examining Chaplain.

The phrase "a judicious arrangement" refers to the fact that in each class-room door was a pane of glass, through which the Principal was able to supervise a room without entering it.

By a very wise arrangement

The Dressing-Room is totally distinct from the Bed-Rooms, and no apparel of any description is allowed to be kept in the latter; this, together with the pupils' thorough wash, every evening before retiring to bed, maintains the atmosphere in the Bed-Rooms, which are well ventilated, in a state of great purity. It may be added that upwards of 1,000 yards of hot-water pipes pass through the dormitories, Boys' Dressing, Lecture, Class, Dining, and Sitting-Rooms, as well as the covered Play-Grounds; the warming apparatus is in operation day and night, during both the vacation and the school term, and the whole of the apartments are fitted up with gas.

Many boarding-school principals might learn valuable lessons in practical hygiene from such arrangements as these with regard to dormitories and dressing-rooms.

The largest room in the school was called the Lecture Room or Theatre. It measured 54 ft. by 42 ft. and accommodated 600 persons. There was a dome in the centre of the roof, and the walls were panelled to a height of 5 ft. At the north end was a platform. The floor was inclined upwards from the platform. This room was used for dramatic performances, debates, elocution, Sunday services, and the annual public examinations.

For the safety of the Establishment, as well as to give immediate notice of any sudden illness, Mr. Dove has three watchmen—one of whom, a person of superior grade, has the entire supervision of the Dormitories from 8 p.m. to 8 a.m., whose duty it also is to prevent any disorder or irregularity on the part of the pupils.

In 1859 there were 172 boys in the school. No day boys were received. These came from places so far apart as Heywood, Burnley, Derby, Hartlepool, Bury, Dewsbury, Manchester, Leeds,

Huddersfield, &c. Mr. Dove's name and fame were well known in the North of England, and many of the best families sent their boys to him. A recent High Sheriff of Lancashire was one of his pupils, to mention one amongst his many distinguished Old Boys.

The following names of masters in the school appear on a good conduct testimonial dated June 15, 1856:—Thos. C. Airey, L. V. Julien, Fredk. Prin, Thos. H. Cocker, Samuel Harper, Jno. Pentecost, R. F. Lowe, J. Cocker, John Strong, J. Sutcliffe, R. D. Markham, W. Emmerich, Samuel Bamford, W. J. Turner, C.E.; J. A. Smallwood, D.M.; Geo. Buckley.

The Man.

The writer, unfortunately for himself, has no personal knowledge of Mr. Dove, but from spoken and written testimony some idea of the man may be suggested. An old pupil describes him as very dark in appearance. He was very genial in manner, and the boys had entire confidence in him and were at their ease in personal dealings with him, though he did not, as a rule, mix much with them. He was generous to a fault. If a parent wrote to him to say that he could not afford to send his boy for another term, Mr. Dove would write and strongly urge that the boy should be sent nevertheless. In such a case no bill was sent at the end of the term.

A strong and determined man, he was prepared to do the right rather than the pleasing. Finding that the usual programme for his annual midsummer examination was too exhausting, he shortened the time and told the parents that

> Mr. & Mrs. Dove take the opportunity to express the pleasure which they have always derived in observing the enjoyment which the Evening's Amusements have afforded to the "Old Pupils," and to assure them that the arduous duties of each Examination Day render it most desirable that the proceedings should terminate, as mentioned in the accompanying Programme.

In a letter to the college magazine a writer says:

> his kindness and liberality are known and participated in by most people with whom he is brought into contact. But it may be said that all this is done from selfish motives; the great principle by which we are all more or less actuated. How comes it then that out of some £10,000 which must pass through his hands yearly, he has not become a rich man? . . . I answer most unhesitatingly—it is spent on us and for our interests chiefly.

That Mr. Dove thought more of his principles and his pupils' progress than of his pocket may be judged from the school charges:—

> For one Half-Year's Board, Education, use of common or usual School Books, Stationery, ordinary Washing, Dancing, Drilling, and Fencing:—Lower School, 18 guineas; Middle School, 19 guineas; Upper School and Special Class, 20 guineas.
>
> French, German, music, surveying, drawing, and chemistry were extras, and the charges for these were 15s. per quarter for one subject, with a gradual reduction for each additional subject, and the whole six for 3 guineas per quarter. Of these subjects it is said:—
>
> The Masters teaching the above extra Branches are first-class men, who are specially retained at high Salaries, while the charges made to Parents are in many instances barely sufficient to cover the cost of Chemicals, Books, Drawings, Paper, Colors, Pencils, &c.

The *Wakefield Journal* gives this tribute:—

> Every boy seems to look up to him at once with the respect due to a superior and the fondness of a son. Submission without sullenness, buoyancy without levity, habitual cheerfulness and willing industry are observable in the demeanour of almost every pupil in the establishment. On the part of the Principal, gentleness with firmness, affability with respect and dignity, are the rules of his demeanour, and hence the effect produced. He is in every respect as courteous towards them as if they were grown-up persons.

Like all strong men, he had a firm belief in himself and his theories. He did not hesitate, "with all deference" and proper courtesy, freely to criticize the Oxford delegates for not making proper provision in their regulations for the requirements of commercial schools.

He was a man of original mind, clear and deep thought, and of independent action. It is not a small thing that a private-school master in the earlier half of the last century was conducting a school on lines which recognized and realized the following principles:—the direct relation of school training to practical life by having as teachers those who had been, or were still, professionally engaged in the subjects which they taught, and making the boys fill such offices in the school establishment as would give them experience and knowledge of everyday affairs; the grouping of subjects and classes so that "selective courses" were possible—a principle much approved in America to-day; the separation and special treatment of weakly and backward pupils; the selection of pupils for special courses according to their special capacities, or the wishes of their parents; the training of pupils in self-government and collective government by holding them personally responsible for some things and giving them collective responsibility for others; the value of systematic physical education, and the high importance of school hygiene; the economy and efficiency of the class-room system; the use of night watchmen to deal with cases of sudden illness or outbreak of fire; and, last and chiefest, the training of character as the *alpha* and *omega* of education. One of his own pupils speaks of him as a man

> Whose mission high and holy
> Tis to train the youthful mind—
> A task for ever pregnant
> With the weal of humankind;
> And the moral of whose teaching
> Shall be felt from age to age,
> By its impress deep engraven
> On the Soul's immortal page.

It was the enthusiastic tribute of an old boy which suggested the writing of the foregoing account of the man and his school. One who has left so deep an impress on the hearts and lives of his pupils was in essence a great and good man. The pioneer of ideas, the worker who labours that he may work out his own salvation, the man of large heart and strong hand, have ever left the world their debtor. To be truly prophet and king in a small world is none the less to be a real prophet and king. Such a one was William Dove.

REVIEWS.

The Horoscope of America.

The Future in America: a Search after Realities. By H. G. Wells. (10s. 6d. net. Chapman & Hall.)

From a two months' run to America one cannot expect more than impressions, doubtful impressions to be held in suspense, however acute and accomplished the visitor may chance to be. Mr. Wells has no illusions on this point, as he reminds his readers from time to time. Still, it is very interesting to observe the impression made upon his mind by main aspects of the America of the northern strip of the eastern sea-board. He sketches a series of pictures, fresh, vivid, and suggestive; maintaining throughout a previously determined standpoint. He tells us freely about his "prophetic habit of mind," citing his well known volumes of speculation on the possibilities of the future; and he says his "tremendous problem" was this: "What is going to happen in the United States of America in the next thirty years or so?" Even thirty years is a hopelessly long outlook, but that does not lessen the interest of what he actually saw in the country, whatever may be the fate of his inferences. The presentation of his experiences is most effective, and holds the reader from beginning to end of the volume. It may, as Mr. Wells engagingly puts it, "be hard for a literary man to estimate the quantity and importance of ideas in a community," but it strikes us that he is unfailingly acute, persistent, outspoken, and fair-minded.

On the voyage out, Mr. Wells illustrates the idea of progress, and the practical outcome of progress, and profitable and futile ways of regarding it, by comparison of his good Cunarder with "pre-Reformation caravels." His first impressions of New York "are enormously to enhance the effect of this Progress, this material progress, that is to say, as something inevitable and inhuman, as a furious energy of growth that must go on"—impressions somewhat modified later, but the heading of the chapter is "Growth Invincible." "Nowhere now is growth still so certainly and confidently *going on* as" in America; "nowhere is it upon so great a scale as here, and with so confident an outlook towards the things to come"; everywhere "the same note sounds, the note of a fatal gigantic economic development, of large prevision and enormous pressures." The distances are spacious, and between place and place there is a sense of isolation: America "is still an unoccupied country, across which the latest developments of civilization are rushing." The population is largely in the towns; "barely half of it is in holdings and homes and authentic communities." In the economic aspect, "America

is simply repeating the history of Lancashire industrialism on a gigantic scale, and under an enormous variety of forms." "The material progress due to a secular increase in knowledge and the economic progress interfere and combine with and complicate one another; the former constantly changes the shapes and appliances of the latter, and may ultimately change the spirit and conceptions of the struggle." Instructive contrasts between England and America add value to the critical description.

Mr. Wells describes the coarser varieties of American Spending, and with scarcely less scorn "that one broader and more presumptuous pleasure—spending to give." "American cities are being littered with a disorder of unsystematized foundations and picturesque legacies," like a nursery floor after a long wet day; some of the gifts splendid things, yet "all this giving is, in its aggregate effect, as confused as industrial Chicago"—Chicago the "undisciplined." Mr. Wells is severe on "the entirely unheroic clutching and over-reaching that constitutes the process" of money-getting, but he discriminates, and has a word of defence for one or two prominent millionaires. He is shocked at the extent and degradation of child labour. "Just think of it! This richest, greatest country the world has ever seen has over 1,700,000 children under fifteen years of age toiling in fields, factories, mines, and workshops." What is "the reality of American corruption"? Mr. Wells answers: "A huge, exclusive preoccupation with dollar-getting," not exactly as you would say "stealing," yet the operation of a commercialized mind, differing "in degree and not in quality from cheating," and, after all is said, "the automatic cash register becomes more and more of a necessity in this thickening atmosphere of private enterprise." The chapters on the Immigrant and the Tragedy of Colour deal pointedly with two serious questions of the near future; and "Two Studies in Disappointment" illustrate painfully the public sense of legal and social justice.

Mr. Wells saw only three Universities—Columbia, Harvard, and Chicago—and his descriptions are mostly external; yet he is "impressed by the evident consciousness of the American universities of the *rôle* they have to play in America's future": they seem to him "pervaded by the constructive spirit," and they "are intelligently antagonistic to lethargic and self-indulgent traditions." Secondary education, we think, is represented only by a digression to Wellesley College from Boston, whence Mr. Wells returned "in a state of mighty doubting," though the girls were pleasant and "made excellent tea." Though he speaks of "that heroic being, the school-marm," he does not admit that American is better than British elementary education. For culture he went to Boston, of course: it may be doubted whether he will be in a hurry to go back. "Frankly," he says, "I grieve over Boston—Boston throughout the world—as a great waste of leisure and energy, as a frittering away of moral and intellectual possibilities." Boston culture "is no contribution to the future of America." What Mr. Wells laments is "a blindness to the crude splendour of the possibilities of America now, to the tragic greatness of the unheeded issues that blunder towards solution." Generally, indeed, "apart from a few necessary preventive proposals," he writes, "I do not perceive any extensive sense of anything whatever to be done, anything to be shaped and thought out and made in the sense of a national determination to a designed and specified end." But perhaps America is not the only country in the world that displays this grievous lack. We have only touched briefly on more prominent points: the whole book, though necessarily slight, is well worth deliberate perusal.

History of Arithmetic.

The Educational Significance of Sixteenth-Century Arithmetic. By Lambert Lincoln Jackson, Ph.D. (New York: Published by Teachers College, Columbia University.)

The work before us forms the eighth of a series of "Contributions to Education" issued by Columbia University. In every respect it furnishes most interesting reading. The period covered by the research to which we owe the volume commences with the year 1478—the date of the first printed treatise on arithmetic—and closes with the year 1600. Between these limits of time arithmetic in Europe underwent great development and assumed a form which was to remain substantially the same for three centuries. In planning his investigations the author duly recognized that, just as striking events are really but landmarks in the history of a nation, whilst it is the uneventful periods that in truth build up the life-history of its people, so it is the bulk of standard minor literature on any subject at any time that reflects the state of its development; whereas the few giant contributions of the epoch are to be regarded as the product of thought and genius in advance of, and not characteristic of, the period in question. An excellent preface and a bibliography of the subject open the volume. The latter is arranged alphabetically according to the names of the writers, and, although a classification based on the sequence of time would in this instance have been a natural and acceptable one, still there are in the mode adopted advantages which may not be overlooked. An outline of sixteenth-century arithmetic is the subject of the first of the two chapters into which the volume proper is divided, and by means of numerous references and extracts, some of which are lengthy, the reader is enabled to consult indirectly the original writings of many authors whose names are more or less familiar. From the contents of this chapter and our personal knowledge of present-day conditions, of which it is the complement, we obtain a comparative sketch of sixteenth-century and contemporary arithmetic, the historical value and suggestiveness of which cannot be too highly estimated. The space at disposal precludes more than a passing reference to the mass of interesting information and detail collected by the author. We read of the transition from "line-counting" by means of the abacus, and from the cumbrous Roman notation to the Hindoo methods and symbols. A variety of causes were at the root of these changes, of which, however, we mention two only, namely, the invention of printing, with the consequent spread of education among the people in general, and the wave of commercial progress which with the rise of the Renaissance spread over Europe after the fall of Constantinople. The increased activity necessitated economy of time, and the older system was doomed. Nevertheless it took long to become obsolete, and its influence marked the text-books of the period in many ways. One of its features bears a curious analogy to a present-day method, arising, however, from entirely different considerations. We allude to the constant checking of work by various devices, notably the casting out of nines and of sevens. At the period of which Dr. Jackson writes, the reason must be sought in the fact that on the abacus, "when the beads were once shifted, or the counters displaced, or the symbols in the sand effaced, there was no record to retrace, no possibility of reviewing the work. It was, therefore, very advantageous to have means of testing the result by some comparison with the original numbers." This reason has not its counterpart in the objects underlying the checking system of to-day. The second chapter is, if possible, even more interesting than the first. Here the author is concerned with the educational value at the present moment of the arithmetic of the sixteenth century considered with reference to its subject-matter, the method in which this was treated in the text-book, and the mode in which our predecessors appear to have imparted the principles of the subject. The relationship to twentieth-century America is naturally the primary question discussed, and, as Dr. Jackson points out, the United States may in a sense be held to occupy now a position similar to that of Western Europe at the time of the Renaissance. He endeavours to show how far the inspiration now is identical with the moving impulse of that past time, how far what was good then is still equally so, where there is need to modify, and where to reject, the methods of the older teachers. The arguments are clear and worthy of careful consideration, and the entire work will amply repay the time devoted its perusal.

The Children.

(1) *The Children of the Nation:* How their Health and Vigour should be promoted by the State. By the Right Hon. Sir John E. Gorst. (Methuen. The New Library of Medicine.)

Sir John Gorst has long been known for his strong and independent views on the condition of submerged classes of the population, and the object of his present comprehensive volume is "to bring home to the people of Great Britain a sense of the danger of neglecting the physical condition of the nation's children." It is the condition and capacity of these—the future British people—that will determine "not only the happiness of our own country, but also the influence of our Empire in the world." And the first consideration must be for their bodies: not till their bodies are cared for can their character and intelligence—their education, religious, moral, or intellectual—be properly developed. Sir John's inquiry extends between birth and the age of sixteen or seventeen—the period when the physical character is fixed for life. Without overlooking the duty of parents, he insists that the State has duties also: "it is under obligations, first, to see that the rights of children are not ignored or violated by their parents; secondly, to give all possible help, by advice and other-

wise, to parents in fulfilling their obligations; and, thirdly, to perform the parental duties itself where from death or incapacity the natural parents fail." He lays a solid threefold basis for collective interference with individual responsibilities in the interest of public health—public safety, public economy, and national interest in having a strong and healthy people; and he points out the insufficiency and the risks of voluntary charitable agencies. He deals with infant mortality, the period under school age, medical inspection, underfed children, overworked children, children's ailments, medical aid (through hospitals, friendly societies, &c.), the Forest School at Charlottenburg ("a concrete example of what a prudent State should do for the rising generation in order to secure that the future race of citizens shall be healthy and strong"), infant schools, school hygiene, physical training, children in factories and mines, State children (orphan, deserted, or those whose parents are paupers in the workhouse or criminals in prison), hereditary disease, the home, and the cost of the reforms suggested or mentioned in the course of the work. Each of these subjects is handled in a thoroughly practical manner. A good deal of the detail and of the argument is by no means new, but it is an immense advantage to have the essential points over the whole field driven home in a connected and systematic exposition, conducted with vigour and acuteness, and with an earnestness that often flashes out in bitter irony or sarcasm.

(2) *The Children:* Some Educational Problems. By Alexander Darroch, M.A., Professor of Education in the University of Edinburgh. (1s. net. Jack.)

This is the first volume of "The Social Problems Series," the general editor of which is the capable and indefatigable Mr. Oliphant Smeaton, M.A., F.S.A. The purpose is to treat current questions of social interest "not only in a lucid and popular manner, but also in the light of present-day principles, present-day facts, and, above all, present-day needs." Already a dozen volumes are announced, all of them by writers that are well known in connexion with the public discussion of their subjects and have manifestly made a special and detailed study of them. The idea is a very fruitful one, and Prof. Darroch leads off with an admirable essay, full of knowledge and suggestion, and written in a popular and forcible style. His little book has two main objects: (1) to emphasize that the aim of all education is to secure the social efficiency of the future members of the State—an aim that embraces the physical, the economic, and the ethical efficiency of the children; and (2) to make us as a nation realize that until we consider the educational problem, not in sections, but as a whole, and apart from mere sectional or party interests, we shall fail to establish a system of education that is organic to the whole life of the State. The introductory chapter sets out the main faults of "our present educational structure"—incoherence of parts and lack of correlation of aims, excess of instruction over education and its remoteness from the real interests of life, the early escape from the elementary school, and the gap between school and the stage of real work, the predominance of one type in the higher-school system to the repression of commercial and technical education—with their causes and consequences. Prof. Darroch next expounds the meaning, process, and end of education; inquires into the duty of the State in regard to the provision and the cost of education, the medical examination and inspection of the children, and the feeding of the underfed. Then he considers the organization of the means of education, the aim of physical education, and the respective aims of the various educational grades from the infant school to the university. The volume should be widely read and pondered.

GENERAL NOTICES.

CLASSICS.

A History of Greece from the time of Solon to 403 B.C. By George Grote. Condensed and Edited, with Notes and Appendices, by J. M. Mitchell, B.A. Oxon., and M. O. B. Caspari, M.A. Oxon., Lecturer in the University of Birmingham and in University College, London. (5s. net. Routledge.)

This is a fine volume of well over eight hundred large octavo pages in the publishers' substantial "Library of Historical and Standard Literature." It looks like an act of vandalism to cut and carve Grote's monumental work; but the special studies of the past half century have put some of it out of date for the purposes of the schools, and at many points have rendered modifications necessary. The editors, considering rightly that "the true value of Grote's work is contained in his account of the Athenian democracy," have selected the chapters that bear most closely upon this particular epoch: "recent research in Greek history has only confirmed the main outline which Grote gave with so much fullness and accuracy." The legendary period, the general description of Greece, the period of Alexander the Great, and several other portions have been omitted; and editorial modifications have been inserted in the reproduced text, or in appendixes to the chapters, or in supplementary notes, being in every case distinctly marked as such. A biographical sketch, as well as a detailed account and justification of the editorial procedure, is prefixed, and there is a full index. The original work is not prejudiced, while the present condensation and selection will be especially advantageous in the schools, as well as for the general reader that wishes to be quite up-to-date in the facts. We note that an advertisement speaks of the ten-volume edition as "unedited": we happen to know that for this edition the whole of the references, as to which Grote was anything but careful, were diligently verified, and that modifications were introduced in some of the maps; but the text and notes were in no way altered, which is probably what "unedited" is meant to express.

Mr. Murray publishes the Classical Association's Committee's Report on *The Pronunciation of Latin* (3d.; or 2s. for 12 copies), adopted by the Association at its Manchester meeting on October 13, 1906. The scheme it embodies has since been approved by the Head Masters' Conference, the Incorporated Association of Head Masters, and the Incorporated Association of Assistant Masters; and it has been officially recommended for adoption in schools by the Board of Education (Circular 555, dated February 14, 1907). The Philological Societies of Oxford and Cambridge, with the Association's scheme before them, adopted substantially identical proposals at a joint meeting at Oxford on November 24, 1905. The Council of the Association now appeals to all classical teachers in the United Kingdom to adopt the scheme, "and by so doing to remove the diversities and ambiguities of practice which have long been a serious obstacle at every stage, and especially at the early stages, of classical study in this country."

MATHEMATICS.

Elements of Descriptive Geometry. By O. E. Randall, Ph.D. (8s. 6d. Ginn.)

Dr. Randall writes for students working in colleges and in schools for engineering; and his own position as a university Professor of Mechanical Drawing has given him special facilities for understanding the most suitable method of presenting his subject to his readers. The leading features of the text-book, which should prove a valuable one, may be briefly stated. First, the theory of the subject is set forth in language as simple as possible, and the writer has taken great pains to be explicit wherever the discussion of principles is concerned. Secondly, very large numbers of problems are proposed. Of these many are discussed at length, and serve both to instruct the student and to show how others of similar type may be attacked, whilst very many are enunciated only, so that they afford the reader excellent opportunities for freely applying the principles previously studied and for exercising power in original solution. The student is encouraged to work in all the four quadrants, but in treating the theory of the subject the author usually views everything from the standpoint which is most often demanded in practice. A third feature of the volume will be found in its numerous neat and clear-cut diagrams, some of which reproduce with the greatest success the effects of three-dimensional space.

The Student's Handbook of Trigonometry, Part I. By Kela Deva Rau, B.A. (Madras: Srinivasa, Varadachari, & Co.)

What are the difficulties which an Indian, as distinguished from an English, student is likely to meet with in learning trigonometry? Readers of the preface to the present work will naturally ask themselves this question. A study of the work itself must, however, lead to the conclusion that the needs of the beginner, whether English or Indian, are very much the same, and the author's little text-book should help equally and well both the one and the other. The subject is treated skilfully, and much of the detail is excellent. The theory is illustrated by many worked examples. Series of exercises occur constantly, each in what the author judges to be the most effective position possible. In some respects the text is capable of improvement. For example, Mr. Rau usefully discusses at first the trigonometrical functions of acute angles: here, although it may be said that the consideration of the *sense* of the terms of the ratios is not absolutely necessary, still it would be preferable for the student to learn at once the mode of naming a line that is of universal application in trigonometry and that must be employed in the great majority of instances. Again, the separate proofs of the various cases connected with the formulæ for the functions of the sum or difference of angles might well be superseded by demonstrations depending on the comprehensive method of projections. The volume is worthy of better printing and more finished reproductions of the diagrams, but possibly the thinness of the paper renders it somewhat unsuitable for mathematical publications.

Blackie's New Concentric Arithmetics. Book III. By D. M. Cowan, M.A. (4d.)

A specimen volume of a series which, to judge from the sample, appears to be a useful publication. A connected scheme is followed in the various parts.

MODERN LANGUAGES.

Old German Love Songs, translated from the Minnesingers of the Twelfth to Fourteenth Centuries. By Frank C. Nicholson, M.A. (2s. 6d. net. Fisher Unwin.)

Mr. Nicholson presents "a selection from Minnesong sufficiently varied and extensive to illustrate roughly the nature and range of the art and indicate the main lines of its development." He gives typical specimens of nearly sixty different singers, the greatest of them all, Walther von der Vogelweide, being represented by seventeen pieces, and ten others by five to ten pieces, the rest by one, two, or three examples. The illustration is thus reasonably adequate. In the translations Mr. Nicholson has tried, as far as he could, to preserve the form of the originals, while giving a faithful rendering of the matter. The task is a very difficult one: the inflexional poverty of English and its reluctant plasticity greatly hamper the translator. Of course, one might produce more attractive verses with larger freedom of treatment, but then, except in the hands of a great poet with an exceptional mastery of English, such verses would not serve the object of representing, as near as may be, the modes of the Minnesingers. Mr. Nicholson has, we think, been very creditably successful; and his translations will be very useful to special students, as well as very interesting to more general readers. The introduction treats of the origin, development, and various aspects of Minnesong, and the manner of life of the professional Minnesinger, and forms a considerable essay of high merit.

The Translation of French Unseens. By Eugène Perrot, B. ès L. (Lettres-Philosophie), Second French Master at the City of London School, and Lecturer in French to the London County Council. (2s. net. Ralph, Holland, & Co.)

M. Perrot has selected from the most esteemed French authors 147 passages, partly prose, partly verse, and arranged them in a general order of difficulty. The collection will be most useful, and all the more useful if the method explained and illustrated in Part I. be well grasped and followed. Part II. contains a judicious selection of a considerable variety of difficulties in syntax, which should be definitely mastered. A vocabulary is appended. M. Perrot has evidently expended much labour on the volume in order to provide a tolerably definite training, as well as material and suggestions for translation.

ENGLISH LITERATURE.

Mr. Frowde has added another half-dozen volumes of first-class literature to the excellent series of "The World's Classics" (1s. each).—(1) *The Complete Poetical Works of Oliver Goldsmith*, edited by Austin Dobson, Hon. LL.D. Edin., with a substantial introduction and ample notes—an admirable edition. (2) *Lectures on the English Comic Writers*, by William Hazlitt, with a discriminating introduction by R. Brimley Johnson—a very welcome reprint. (3) A fourth volume of *The Works of Edmund Burke* (containing "Reflections on the Revolution in France, 1790," "A Letter to a Member of the National Assembly, 1791," and "Thoughts on French Affairs, 1791"), with a useful introduction by F. W. Raffety. (4) and (5) *The French Revolution*, by Thomas Carlyle, with a critical introduction by C. R. L. Fletcher, and also a serviceable index. (6) *Palgrave's Golden Treasury* of the best songs and lyrical poems in the English language, together with additional poems (to the end of the nineteenth century). Appended are Palgrave's notes, and indexes of writers and first lines.

Mr. Frowde has also included in his delightful series of "The Boys' Classics" (1) *The Rifle Rangers*, by Captain Mayne Reid, with six illustrations by J. E. Sutcliffe; and (2) *The King's Own*, by Captain Marryat, with six illustrations by Warwick Goble. (1s. each.)

Messrs. Routledge issue in their attractive "New Universal Library" (1) *A Smaller History of Greece, from the Earliest Times to the Roman Conquest*, by Sir William Smith, LL.D., with inset plans and sketch-maps, and index—a work long and favourably known in the schools; and (2) *Homer's Iliad*, by Lord Derby, a valuable addition to a popular series. (1s. each.)

SHAKESPEARE FOR SCHOOLS.

Coriolanus. (1) Edited by A. W. Verity, M.A. (3s. Cambridge University Press.) (2) Edited by Stanley Wood, M.A. (2s. George Gill & Sons. Oxford and Cambridge Edition.) (3) North's Translation of Plutarch's Life of Caius Martius Coriolanus. Edited by Augustus Jessop, D.D., formerly Head Master of King Edward's School, Norwich, and R. H. Allpress, M.A., City of London School. (1s. George Gill & Sons.) (4) Questions and Notes on the play, and (5) Supplement to (4), by Stanley Wood, M.A. (1s. and 6d. George Gill & Sons.)

(1) No more need be said of Mr. Verity's edition than that it ranks worthily with his editions of previous plays, being marked throughout

(*Continued on page* 266.)

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The text is beautifully printed, and each volume is strongly bound in a tasteful limp cloth cover. The brief introductions, directed to an appreciation of the plays, are extremely well written and suggestive. Usually a half-page illustration introduces each Act. A very handy and agreeable edition.

An Introduction to Shakespeare. By Frederic W. Moorman, B.A., Ph.D., Assistant Professor in the University of Leeds. (1 M. Teubner.)

A slim volume, intended to be a companion to the various plays of Shakespeare in Teubner's series of "School Texts of Standard English Authors," and useful independently of the particular series. Dr. Moorman gives a brief sketch of the author's life, an account of the Elizabethan theatre, sections on Shakespeare's verse and Shakespeare's English, and a critical analysis of four plays—"The Merchant of Venice," "The First Part of King Henry IV.," "Julius Cæsar," and "Macbeth." The most distinctive element, from the point of view of editions of the plays for English schools, is the description of the Elizabethan theatre. The work is very well done. There is a frontispiece (portrait of Shakespeare), and three full-page illustrations.

GEOGRAPHY.

A Junior Course of Comparative Geography, consisting of Course A of "A Progressive Course of Comparative Geography." By P. H. L'Estrange, B.A. Oxon., Assistant Master at Malvern College. (2s. 6d. net. Philip. Philips' Comparative Series.)

The work is intended primarily for boys between eleven and thirteen during their last two years at preparatory schools, though it need not, by any means, be confined to such pupils. It is divided into six Parts, for six terms: (1) Principles of Geography, Polar Regions, General World Facts; (2) The British Isles; (3) Europe; (4) North America and Asia; (5) Central and South America and Africa; (6) The British Empire. The aim is to stimulate the reason rather than to train the memory—education not instruction; and the subject is developed in logical order. Abundant questions and exercises at the end of the several chapters will test the reality of the pupil's progress. The illustration is profuse and excellent—177 pictures and diagrams. The work is fresh, vigorous, and practical, and the form is attractive.

An Introduction to Practical Geography. In three Sections: (1) Maps; (2) The Globe; (3) Climate. By A. T. Simmons, B.Sc. Lond., A.R.C.S. Lond., and Hugh Richardson, M.A., Senior Science Master of Bootham School, York. (1s. each Section. Macmillan.)

It is about a couple of years since this work first appeared. Last year it was reprinted with alterations, and now it is published in separate Sections for greater convenience, the last (fourth) Section excepted. The scheme is very distinctive, and it has been worked out with elaborate thoroughness. The exercises are to be used to supplement, not to supersede, the ordinary descriptive lesson—"to take, that is, the place of laboratory work in modern scientific instruction." There are 171 figures in the three volumes. A very suggestive and meritorious work.

The Oxford Geographies. Vol. II. *The Junior Geography.* By A. J Herbertson, M.A., Ph.D., Reader in Geography in the University of Oxford. Second Edition, 1906. (2s. Clarendon Press.)

The British Isles are treated in some detail, the rest of the countries of the World more broadly; and, while the physical (and political) facts are clearly and attractively presented, the economic conditions receive much attention. There are 166 illustrations, pertinent and effective. An excellent text-book.

ART.

The Principles of Architectural Design. By Percy L. Marks, Architect. (10s. 6d. net. Swan Sonnenschein.)

A short time ago Mr. Marks dealt with the principles of Planning in a well considered treatise that has proved its practical value, and now he essays to set forth the steps to be taken to produce elevations suitable to given plans, the term "Design" in the title being limited to the treatment of elevations, sectional or other. The correlation of plan and elevation would seem to be an elementary artistic requirement, but we are afraid there is only too large scope for the teaching of Mr. Marks on the subject, notwithstanding much recent professional progress and a more instructed public taste. The volume is about equally divided between Exterior and Interior Design. The author unfailingly regards his building as a thing of art, and throughout his exposition and criticism he holds tenaciously to principle. It is beyond our province to enter into details; but we have no doubt that the budding architect will find valuable instruction and suggestion in every chapter of the book. Theoretical and practical considerations are frankly handled on the merits with complete independence and distinctive ability. The work has grown out of a series of articles in the *Architect* in 1903, and the matter has thus obtained the benefit of criticism and revision. The illustration is profuse and carefully adapted to the text: there are 33 plates and 133 inset figures.

"The 'A.L.' Spectrum Colour Scheme."—*Educational Handwork and Systematic Colour Instruction for Children, based on the Spectrum.* By Florence Kirk (*née* Hewitt). (5s. net. E. J. Arnold & Son, Leeds.)

The importance of sense-training of young children is freely admitted on all sides, and the value of systematic colour-teaching in education is illustrated and emphasized throughout this volume, which (Miss MacMillan says in her very appreciative preface) "represents an effort to lead the child through a new Gate of Joy into a new Treasure House of Beauty." Messrs. Arnold have provided a vast variety of specially suitable materials (hitherto often very difficult and at times impossible to obtain) for the carrying out on scientific lines of the many branches of work usually associated with teaching in infant and preparatory schools. These include Spectrum Balls, Spectrum Beads, Spectrum Tiles, Spectrum Design Cards, and many others; and Mrs. Kirk sets forth systematically how these devices can be applied most effectively in developing and training the colour-sense in infants and juniors. The scope and system of the work are largely original, and the course is varied, progressive, practical, and thorough. There is a great number of plates, mostly in colour. The work shows keen educational enterprise on the part of both author and publishers, and it is sure to engage the interest of the children and to widen their perceptions.

The Sculpture of the West. By Dr. Hans Stegmann, Conservator of the Germanic National Museum at Nuremberg. Translated by Marian Edwardes. (1s. net. Dent. The Temple Primers.)

There is but limited scope for a large subject in these little primers, but Dr. Stegmann contrives to pack a great deal of detail into his 160 small pages by careful distribution of the matter according to importance. The lines of development and the various characteristics of periods and artists are clearly exhibited, and a reader may learn much from the simple outline. England is represented by a single page, and that in the early Middle Ages. Greece and Rome, Italy, Germany, and France claim the rest of the volume. There are twenty-three full-page illustrations, well selected and reproduced.

MUSIC.

English Folk-Songs for Schools. Collected and arranged by S. Baring Gould, M.A., and Cecil J. Sharp, B.A. (2s. 6d.; words only, 3d. Curwen.)

There are 52 pieces—15 ballads, 26 songs, and 11 infants' songs—suited to the requirements of the Board of Education. The compilers lay stress upon the English character of the tunes, and upon their popular origin and use. "The folk-song of one race," they say, "is not the folk-song of another, any more than the warble of the blackbird is the twitter of the finch. Why, then," they demand, "should we endeavour to force children to learn the notes of Germany, France, and Italy, instead of acquiring that which is their very own?" "Every one of the tunes in this book," they state, "has been taken down by ourselves from the mouths of the people, with the exception of three contributed by Lady Lethbridge." Several of the pieces, indeed, have a wide vogue, and are not confined to England, much less to a particular district of England. The collection is extremely interesting, and we have no doubt it will find its place in the schools and in public esteem, notwithstanding the foreign invasions.

Six Songs from "The Magic Whistle and other Fairy Plays." Words by Frank Nesbitt. Music composed by E. A. Wilshire, F.R.C.O. (6d. net each. F. Pitman Hart & Co., 20 and 21 Paternoster Row, E.C.)

We noticed Mr. Nesbitt's charming volume (Longmans) among "New Year Gift Books" in our January number. Mr. Wilshire's engaging and simple music will popularize the songs.

No. 4 of the *Church Music Society Reprints* (3d. Frowde) consists of "O Lord of Hosts!" (Dr. Tye), and Mendelssohn's eight-part Anthem (for Lent) "Lord, remember not all our wickedness."

FIRST GLANCES.

Modern Languages.

Arnold's Advanced French Series. De l'Angleterre, par Madame de Staël (from "Considérations sur la Révolution Française"). Edited by W. G. Hartog, M.A., Lecturer in French at University College, London. 1s. 6d.

[Preface on the author and the book. Notes chiefly historical. Exercises in translation and subjects for composition. A capital start to the series; type excellent; binding strong and agreeable.]

Blackie's Little French Classics. (1) La Fontaine: Shorter Fables. Edited by Arthur H. Wall, M.A., of Marlborough College. 6d. (2) Athalie (Racine). Edited by G. H. Clarke, M.A., Officier d'Académie. 10d. (3) Les Caractères (La Bruyère): Selections. Edited by J. Laffitte, B. ès L., Principal French Master in the City of London School. 4d.

[(1) Notes, Exercises, Vocabulary. (2) Serviceable notes. (3) Notice biographique; brief notes; sujets de narration.]

Collection Stead. No. 1: Contes d'Enfants. 2e éd. 20 centimes; 3d. in England. (9 Rue Soufflot, Paris.)

[Seven favourite stories—Le Petit Chaperon Rouge, &c. 200 original illustrations, by Brinsley le Fanu. Astonishingly cheap.]

Goethe. Iphigenie auf Tauris. Edited by Philip Schuyler Allen, Assistant Professor of German Literature in the University of Chicago. 3s. Ginn.

[Literary introduction, extensive and good; useful notes; repetitional exercises (*Fragen*); vocabulary full and careful. Very substantial edition.]

Readings for School and Home.

Blackie's School and Home Library. The Last of the Mohicians. By J. Fenimore Cooper. 1s.

[Frontispiece. Good clear type.]

Harrap's English Supplementary Readers. (1) Stories from Dickens. Selected by J. Walker McSpadden. (2) Stories from "The Earthly Paradise." Retold from William Morris by Madalen Edgar, M.A. (3) Stories from the Æneid, retold from Virgil by H. L. Havell, B.A. 1s. 6d. each.

[Excellent volumes of a delightful series. Each has sixteen full-page illustrations on art paper.]

Nelson's Sixpenny Classics. (1) Westward Ho! (Charles Kingsley). (2) The Pathfinder (Fenimore Cooper). (3) The Three Musqueteers (Alexandre Dumas).

[Unabridged. Well printed; strongly bound. Remarkable value for the money.]

Oliver & Boyd's "Continuous" Readers. (1) The Story of Prince Charlie (from Scott's "Tales of a Grandfather"). (2) The Pilgrim's Progress (abridged). (3) Selected Lives from Plutarch. 3d. each.

[(1) belongs to the Intermediate Group; (2) and (3) to the Senior Group. Each has a frontispiece. A page or two of "Notes and Meanings" appended. Excellent reading; good type; chaste get-up.]

Stead's Graded Reading Books. Edited by T. Kirkup. (1) Æsop's Fables. (2) Animal Stories. (3) Holiday Stories. By Gladys Davidson. (4) Favourite Fairy Tales. (5) Little Snow-white, and other Fairy Tales (Grimm). 4d. net each. Stead's Publishing House (39 Whitefriars Street, E.C.).

[(1) and (3) for Standard I. (4) and (5) for Standard II. (2) for Standard III. Admirably edited; illustrations profuse; type good.]

Miscellaneous.

Agricultural and Dairy College, The Midland: various Reports. (1) On Experiments on the growing of Sugar Beets; (2) On Field Trials on Mangels and Swedes grown at various distances apart; (3) On Field Trials on Manuring of Swedes; (4) On Field Trials on the Manuring of Mangels.

[Interesting and instructive.]

Cricket Handbook for 1907. 1d. Long.

Dangers Ahead! Essays by "Akaroa." No publisher named.

[On various public questions, financial and social.]

Field Experiments in Staffordshire and Shropshire and at the Harper Adams Agricultural College, Newport, Salop: Joint Report for season 1906. Stafford: Mort.

[Very careful and serviceable records.]

Golfer's Manual. 1d. Long.

[Extraordinary compendium of information.]

New South Wales, The Year-Book of. Compiled by the Editor of "The Year-Book of Australia" for circulation by the Agent-General in London, 123 and 125 Cannon Street, E.C.

Sports, Record of. Fourth Edition. Royal Insurance Co.

MATHEMATICS.

16090. (H. Bateman, B.A.)—A_1, A_2, A_3, A_4 are any four points in a plane. Out of these any point such as A_4 is chosen, and lines are drawn through A_1, A_2, A_3 perpendicular to A_4A_1, A_4A_2, and A_4A_3 respectively, so as to form a new triangle $B_1B_2B_3$. Prove that the ratio of the areas of the triangles $A_1A_2A_3$, $B_1B_2B_3$ is the same whichever point A_4 is chosen.

Solution by the Proposer.

The proof of the proposition depends upon the following considerations:—

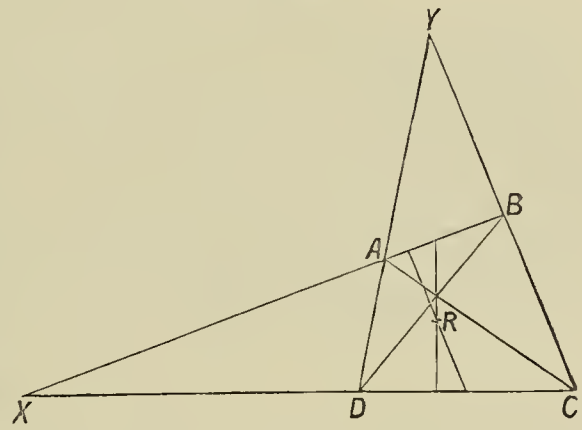
(1) If we project orthogonally the figure formed by a triangle and its orthocentre, it is easy to see that each of the conics having one point, say A_3, as centre and the other three as a conjugate triad has the same eccentricity.

(2) If A_4 is the centre of a conic having $A_1A_2A_3$ as a conjugate triad and a triangle $B_1B_2B_3$ is obtained in the manner described, the ratio of the triangles $A_1A_2A_3$, $B_1B_2B_3$ depends only on the eccentricity of the conic.

If one of your readers can obtain a simpler demonstration, I shall be very glad.

16183. (Professor R. W. Genese, M.A.)—Inward forces act at the mid-points of the sides of any plane quadrilateral at right angles and proportional to the opposite sides. Prove (1) that they balance, (2) that the resultant of two opposite forces acts along the directrix of the parabola inscribed in the quadrilateral.

Solution by S. T. Shovelton, M.A.



(1) Let each force be replaced by its two equivalent parallel forces at the ends of the line at the middle point of which it acts. Then at A there are now two forces, one perpendicular and proportional to BC, and the other perpendicular and proportional to CD. Their resultant is perpendicular and proportional to BD. So also the resultant at C is perpendicular and proportional to BD. These form a couple of moment proportional to AC . BD cos θ, where θ is the angle between the diagonals. So also the forces at B and D form an equal couple which balances the first, and the system is therefore in equilibrium.

(2) The orthocentres of the four triangles XAD, XBC, YAB, YCD lie on the directrix of the parabola inscribed in ABCD. Let the lines of action of two opposite forces meet at R and those of the other pair at S. It can easily be proved that R is collinear with the orthocentres of XAD and XBC. Therefore R is on the directrix. Similarly S is on the directrix. But RS must be the line of action of either pair of opposite forces, and therefore the resultant of either pair acts along the directrix.

[Rest in *Reprint*.]

16152. (M. V. Arunachalan, M.A.)—Show that

$$[a(b-c)(bc-aa')(a^4-a'^4)]/(a-a') + [b(c-a)(ca-bb')(b^4-b'^4)]/(b-b') + [c(a-b)(ab-cc')(c^4-c'^4)]/(c-c')$$
$$= (b-c)(c-a)(a-b)(bc-aa')(ca-bb')(ab-cc')\,S/abc$$

where $aa' = bb' = cc'$ and $S = a+b+c+a'+b'+c'$.

Solution by F. W. Reeves, M.A., *and* Lalit Mohon Mukherji, M.A., B.L.

In the given expression put $b = c$, and then, from the given condition $bb' = cc'$, we get $b' = c'$, and the expression vanishes; therefore $b-c$ and similarly $(c-a)$ and $(a-b)$ are factors. Again, put $b = c'$, and then $b' = c$, and the given expression again vanishes; therefore $(b'-c)$, $(c'-a)$, and $(a'-b)$ are factors.

Now the given expression is of the seventh degree and we have six factors; therefore the remaining factor is LS, where L is numerical and $S = \Sigma a + \Sigma a'$. Also

$b'-c = -(bc-aa')/b$, $c'-a = -(ca-bb')/c$, and $a'-b = -(ab-cc')/a$;

therefore the given expression

$$= -L(b-c)(c-a)(a-b)(bc-aa')(ca-bb')(ab-cc')\,S/abc.$$

Equating coefficients of a^4b^2c on both sides, we find that $L = 1$; therefore $\Sigma\,[a\,(b-c)(bc-aa')(a^4-a'^4)]/(a-a')$

$$= (b-c)(c-a)(a-b)(bc-aa')(ca-bb')(ab-cc)\,S/abc.$$

N.B.—The symmetry of this result shows that, with the same conditions,

$$\Sigma\,[a'\,(b'-c')(b'c'-aa')(a^4-a'^4)]/(a-a')$$
$$= (b'-c')(c'-a')(a'-b')(b'c'-aa')(c'a'-bb')(a'b'-cc')\,S/a'b'c'.$$

16114. (*Suggested in conversation by the late* Professor P. G. Tait. *Communicated by* J. Blaikie, M.A.)—A. and B. play golf, and at each hole it is equally probable that the hole may be won by A., won by B., or halved. Find A.'s chances of winning, halving, or losing the match, if he is (1) 2 up and 3 to play, (2) 2 up and 4 to play, (3) m up and $m+n$ to play.

Solution by H. M. Taylor, M.A., F.R.S.

Let A.'s chance at any particular hole of winning, halving, or losing be p, q, r respectively, where $p+q+r=1$. Let

$$(px+q+rx^{-1})^{m+n} = C_{m+n}x^{m+n} + \ldots + C_s x^s + \ldots + C_0 + \ldots$$
$$+ C_{-r}x^{-r} + \ldots + C_{-(m+n)}x^{-(m+n)}.$$

Then, if there are $m+n$ holes to be played, A.'s chances of altering his lead by $+s$, by 0, or by $-t$ are C_s, C_0, and C_{-t} respectively. If, therefore, A. is at present m up, his chance of halving is C_{-m}, his chance of winning is $C_{m+n} + \ldots + C_{-(m-1)}$, and his chance of losing the match is $C_{-(m+1)} + \ldots + C_{-(m+n)}$. In the special cases given, we can put $p = q = r = \frac{1}{3}$, whence the chances of winning, halving, and losing the match will be in case (1) $\frac{23}{27}$, $\frac{3}{27}$, $\frac{1}{27}$, and in case (2) $\frac{66}{81}$, $\frac{10}{81}$, $\frac{5}{81}$ respectively.

Remarks by A. M. Nesbitt, M.A.

[As a golfer's "remarks" will not always bear reproduction in print, I hasten to assure your readers that I am not a golfer.]

The value of m has no influence on A.'s chance of winning any specified number of holes in those that still remain to play, it will merely affect the number he has to win or halve in order to halve the match—more than this number will win for him, less will lose. If N/D be his chance of *scoring* r holes, *i.e.* of winning s and halving $2(r-s)$, out of n holes to play, I find the following:—

$$r = 0,\ \tfrac{1}{2},\quad 1,\quad 1\tfrac{1}{2},\quad 2,\quad 2\tfrac{1}{2}$$
$$N = 1,\ n,\ \frac{n(n+1)}{2!},\ \frac{n(n-1)(n+4)}{3!},\ \frac{n(n-1)(n^2+7n-6)}{4!},$$
$$\frac{n(n^2-1)(n-2)(n+12)}{5!};$$

and, of course, $D = 3^n$. In the two special cases given we get

$$r = 0,\ \tfrac{1}{2},\ 1,\ 1\tfrac{1}{2},\ 2,\ 2\tfrac{1}{2},\ 3,\ 3\tfrac{1}{2},\ 4;$$
$$(1)\quad N = 1,\ 3,\ 6,\ 7,\ 6,\ 3,\ 1,\ —,\ —;\quad D = 27;$$
$$(2)\quad N = 1,\ 4,\ 10,\ 16,\ 19,\ 16,\ 10,\ 4,\ 1;\quad D = 81;$$

so that in (1) A's chances of losing, halving, and winning are respectively $\frac{1}{27}$, $\frac{3}{27}$, $\frac{23}{27}$, and in (2) they are $\frac{5}{81}$, $\frac{10}{81}$, $\frac{66}{81}$.

Further than $r = 2\frac{1}{2}$ I have not gone in the general case; in fact, I would far sooner learn to play golf than attempt such a feat. If the solution of this problem be regarded as a "hole" at that pastime, I am inclined to think that it is more likely to be halved than won by your contributors.

In the case of m up and $m+n$ to play, we must make $r = \frac{1}{2}n$ for a tie, and write $m+n$ instead of n in the above results. I have not done so, as I conceive they are quite unwieldy enough as they stand.

Mr. Blaikie's Solution is as follows:—

(1) A. will lose if B. wins all three holes. The probability of this is clearly $1/3^3 = \frac{1}{27}$. The match will be halved if B. wins two and halves one hole. As this may be done in three ways, the probability of its happening is $3.1/3^3 = \frac{3}{27}$. Thus A.'s chance of winning the match is $1 - \frac{4}{27} = \frac{23}{27}$.

This may also be shown by considering the different ways A. may win and the chances of each. He may win by winning the first hole—chance $\frac{1}{3}$.

If we write a for a hole won by A., b for one won by B., and 0 for one halved, then A. may win the match in the next two holes by any of the following combinations:—00, $0a$, ba—chance $\frac{3}{9}$. Or he may win in three holes by $0ba$, $0b0$, $b00$, $b0a$, bba—chance $\frac{5}{27}$. His whole chance is therefore $\frac{1}{3} + \frac{3}{9} + \frac{5}{27} = \frac{23}{27}$.

(2) Here B. wins if he gains all four holes or if he gains three and halves the fourth. His chance is therefore $\frac{5}{81}$. The game is halved if either B. wins three holes and A. wins the fourth ($\frac{4}{81}$) or if B. wins two holes and halves two ($\frac{6}{81}$). Total chance of halving $\frac{10}{81}$. Thus A.'s chances of winning is $1 - \frac{5}{81} - \frac{10}{81} = \frac{66}{81} = \frac{22}{27}$. This may be verified as in (1).

(3) I have not been able to establish a general formula for all values of n. The following formulæ hold good when $n = 1, 2, 3$:—

	Ratios of Chances of A.'s		
n	Winning.	Halving.	Losing.
1	$3^{m+1} - (m+2)$	$m+1$	1
2	$3^{m+2} - \frac{1}{2}(m+2)(m+4)$	$\frac{1}{2}(m+2)(m+3)$	$m+3$
3	$3^{m+3} - \frac{1}{6}(m^3+15m^2+68m+156)$	$\frac{1}{6}(m+2)(m+3)(m+7)$	$\frac{1}{2}(m+4)(m+5)$

The proofs can be easily established; but the work is long and is not particularly interesting.

16088. (Professor Nanson.)—Find the condition that two given conics may intersect a given line in the same two points.

Solution by Constance I. Marks, B.A.

Take rectangular axes and the given line as Ox.

Let the equations to the given conics be respectively

$$a_1x^2 + 2h_1xy + b_1y^2 + 2g_1x + 2f_1y + c_1 = 0 \quad\ldots\ldots(1)$$

and

$$a_2x^2 + 2h_2xy + b_2y^2 + 2g_2x + 2f_2y + c_2 = 0 \quad\ldots\ldots(2).$$

These cut $y = 0$ where

$$a_1x^2 + 2g_1x + c_1 = 0,\quad a_2x^2 + 2g_2x + c_2 = 0 \quad\ldots\ldots(3, 4).$$

The required condition is the condition that (3) and (4) may have the same roots, and it follows that we must have

$$a_1/a_2 = g_1/g_2 = c_1/c_2.$$

15999. (D. M. Y. Sommerville, M.A., D.Sc.)—Find the forms o the equation of a conic which is its own reciprocal.

Discussion of the Question by θ.β.

Consider the reciprocal of a conic S with respect to another, S′; suppose that one of the intersections of S, S′ is P. Then the reciprocal of P with respect to S′ is PT, the line touching S′ at P; by hypothesis PT touches S, and must therefore touch S at P. It follows that S, S′ touch at their common points; and they must therefore have double contact.

It is easily verified that, if we write

$$S' = ax^2 + by^2 + cz^2,\quad S = kS' + (lx + my + nz)^2,$$

then the only further condition is $l^2/a + m^2/b + n^2/c + 2k = 0$. In particular, with $a = b = c = 1$, we find

$$S = (l^2 + m^2 + n^2)(x^2 + y^2 + z^2) - 2\,(lx + my + nz)^2,$$

agreeing with the results given by the Proposer in Vol. xi.

16169. (R. W. D. Christie.)—When p is any prime of form $4m-1$ and r_1, r_2 are two different prime roots, prove that $r_1^2 + r_1r_2^2 = 0 \pmod p$. Give a few other similar equations and show their utility in factorization. *E.g.*, $10^2 + 10.3^2 = 0 \pmod{19}$; also

$$2^2 + 2.13^2 = 3^2 + 3.15^2 = 13^2 + 13.14^2 \ldots.$$

Solution by Lt.-Col. Allan Cunningham, R.E.

The proposition requires some limitation. For $r_1^2 + r_1r_2^2 \equiv 0 \pmod p$ is equivalent to $r_1 + r_2^2 \equiv 0$. Now, if r_2 be any primitive root of p, then

$$r_1^{\frac{1}{2}(p-1)} \equiv -1 \quad\text{and}\quad r_1^{(p-1)} \equiv +1 \pmod p,$$

and no lower exponents will yield these (∓ 1) residues. Next, taking a number r_1, such that

$$r_1 = p - r_2^2,\quad\text{or}\quad \equiv p - r_2^2,\quad\text{or}\quad \equiv -r_2^2 \pmod p;$$

then

$$r_1^{\frac{1}{2}(p-1)} \equiv (\bar{1})^{\frac{1}{2}(p-1)},\quad r_1^{p-1} \equiv (\bar{1})(+1) \equiv -1 \pmod p,$$

and no exponent less than $\frac{1}{2}(p-1)$ will suffice to yield this (-1) residue. Hence r_1 is also a primitive root. Thus to every primitive root (r_2) belongs one, and only one, primitive root satisfying the congruence

$$r_1 + r_2^2 \equiv 0.$$

Ex.—The pairings of the primitive roots for $p = 19$ are

$$2^2 + 15 \equiv 3^2 + 10 \equiv 10^2 + 14 \equiv 13^2 + 2 \equiv 14^2 + 13 \equiv 15^2 + 3 \equiv 0.$$

A general extension of above to residuacity of any hyper-even order n is as follows:—

Let $n = 2^\nu$, $p = 2n\omega + 1$, ω an odd number, and let r_2 be any number such that $(r_2/p)_{2n} = -1$; then the number r_1, given by

$$r_1 + r_2^2 \equiv 0 \pmod p,$$

is also a residue of the same order n, *i.e.*, $(r_1/p)_n = -1$.

Ex.—$p = 281 = 8.5.7 + 1$; $n = 4$; $(2/p)^8 = -1$; $277 + 2^2 = p$; therefore

$$(277/p)_8 = -1.$$

The following Solution is due to the PROPOSER.

From previous work by the Proposer we have, when $p = 4m-1$, $r^2+r_1 = 0 \pmod p$, where r and r_1 are both prime roots of p; thus, $r_1^2+r_1r^2 = 0 \pmod p$, and here we may substitute $R_1 = pk+r_1$ and $R = pl+r$ for r_1 and r respectively, where k and l are perfectly arbitrary. The theorem is adapted to factorization thus: let

$$N = 22987^2+10\,.\,23017^2;$$

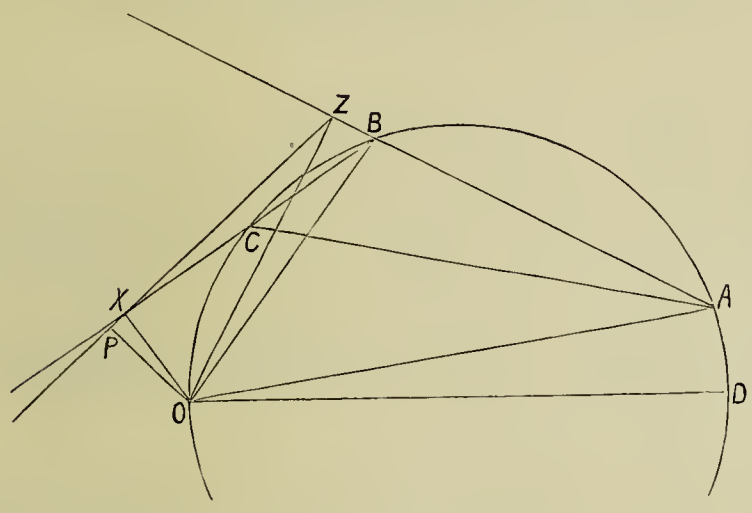
then we may detect the factor 23 from the fact that $23017 = 23k+17$ and $22987 = 23l+10$, where 10 and 17 are both prime roots of 23. The principle is of wide application, and other root equations may be used to get a second factor, *vide* previous volumes, especially Questions 14593, 14668, 14616, in Vol. LXXV., p. 16, &c., and Question 15168, Vol. IV., New Series, &c.

A Theorem in Analytical Geometry.

By W. GALLATLY, M.A.

O being the pole of the circle $r = 2a\cos\theta$, and α, β, γ being the vectorial angles of A, B, C, *to prove the Simson line of* O *is*

$$r\cos[\theta-(\alpha+\beta+\gamma)] = 2a\cos\alpha\cos\beta\cos\gamma.$$



Draw OP perpendicular to the Simson line XZ,

$$\angle ZOA = 90^\circ-\angle ZAO = 90^\circ-\angle BDO = \beta,$$

$$\angle POZ = 90^\circ-\angle XZO = 90^\circ-\angle XBO = 90^\circ-\angle CDO = \gamma;$$

therefore $\angle POD = \alpha+\beta+\gamma.$

Also $OP = OZ\cos\gamma = OA\cos\beta\cos\gamma = 2a\cos\alpha\cos\beta\cos\gamma;$

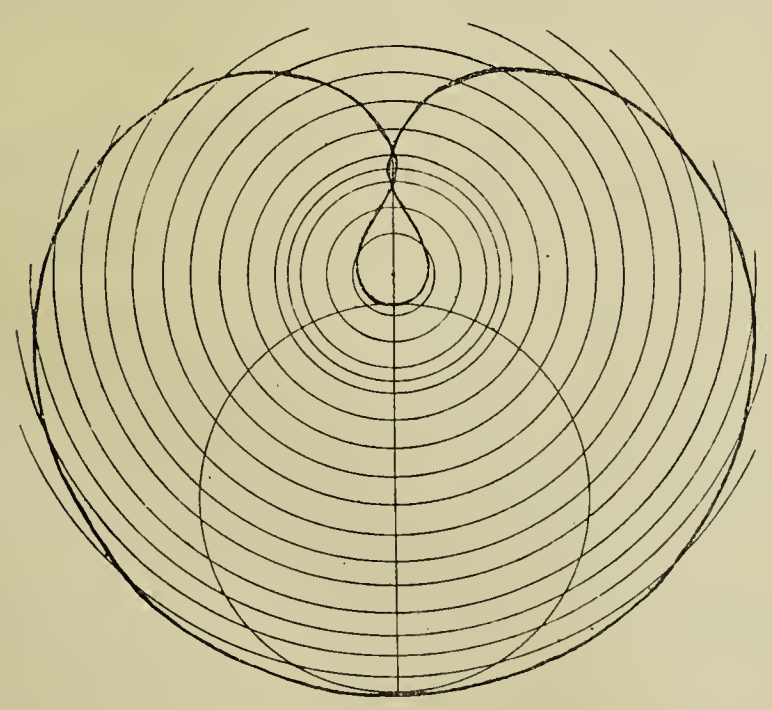
therefore, &c.

16176. (Professor LAUVERNAY.)—Construire la courbe

$$\rho^2-4\rho\cos\tfrac{1}{3}\omega+1 = 0.$$

Solution by HENRY RIDDELL, M.E.

The curve $\rho^2-4\rho\cos\frac{1}{3}\omega+1 = 0$ can be constructed from the related curve $\rho^2-4\rho\cos\omega+1 = 0$ in the following way. Construct the circle represented by the latter curve, which has a radius $\sqrt{3}$, and origin at



a distance 2 from the centre. With the origin as centre draw a series of circles cutting the circle already drawn, and upon these circles set off arcs, measured from the line joining the origin to the centre of the original circle, and equal to three times the intercept between this axis and the circumference. These are points on the curve, and, if joined, give a curve resembling that drawn. The proof is obvious. The series of such curves can be made to include the circle and ellipse. In the same way the general curve $\rho^2-4a\rho\cos\omega/n+b = 0$ may be constructed.

16145. (W. AUSTIN SLEIGH, B.A.)—In Question 15909 prove that, if ξ be centre of ellipse, I be in-centre, and I_1 ex-centre, corresponding to A, of the triangle ABC, (1) foot of directrix, K, is at distance $s/2e$ from ξ; (2) BI meets AX at distance $e(s-c)$ from X, and BI_1 meets it at distance $es^2/(3c-b-a)$ from ξ; (3) length of semi-diameter conjugate to ξB is $\sqrt{(r_1r_2)}$; (4) $I_1B : I_1C = \sqrt{r_2} : \sqrt{r_3}$; (5) the parallel straight line to BI_1 through ξ meets BC at distance $(BL =)\, s/2$ from B; (6) $4\xi T\,.\,CL = es^2$, T being intersection of BI_1 and AX; (7) ratio of CL to distance of foot of B ordinate from ξ is that of the eccentricity.

Solution by the PROPOSER.

(1) We have $\xi X\,.\,\xi K = (\frac{1}{2}s)^2$, $\frac{1}{2}(AX)\,\xi K = \frac{1}{4}s^2$, $\frac{1}{2}es\,.\,\xi K = \frac{1}{4}s^2$;

therefore $\xi K = s/2e.$

(2) We have $XG = eXB = e(s-c).$

Again, $\xi G\,.\,\xi T = \xi X^2$, $(\xi X-XG)\,\xi T = \xi X^2$, $(\frac{1}{2}AX-XG)\,\xi T = \xi X^2$,

$$[\tfrac{1}{2}es-e(s-c)]\,\xi T = \tfrac{1}{4}e^2s^2,\quad e(c-\tfrac{1}{2}s)\,\xi T = \tfrac{1}{4}e^2s^2;$$

whence $\xi T = es^2/(3c-a-b).$

(3) Semi-diameter conjugate to ξB

$$= \sqrt{(XB\,.\,AB)} = \sqrt{[s(s-c)]} = \Delta/\{\sqrt{[(s-a)(s-b)]}\} = \sqrt{(r_1r_2)}.$$

(4) Since I_1B, I_1C are tangents to the ellipse, they are in the ratio of the semi-conjugate diameters; therefore

$$I_1B : I_1C = \sqrt{(r_1r_2)} : \sqrt{(r_2r_2)} = \sqrt{r_1} : \sqrt{r_3}.$$

(5) Since BI_1 is tangent at B, the straight line through ξ parallel to BI_1 is the direction of the conjugate diameter to ξB, and therefore meets the focal chord XB at L; hence $BL = \frac{1}{2}s$.

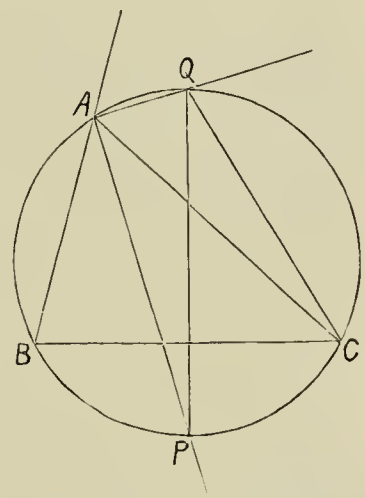
(6) Since $BL = \frac{1}{2}s$, $CL = \frac{1}{4}(3a-b-c)$. Combining this with (2), we have $4\xi T\,.\,CL = es^2.$

(7) We have $\xi N\,.\,\xi T = (\frac{1}{2}s)^2$; therefore $e\xi N\,.\,\xi T = \xi T\,.\,CL$, where

$$CL/\xi N = e.$$

16200. (Professor SANJÁNA, M.A.)—The great circle bisecting perpendicularly the side BC of the spherical triangle ABC meets the great circles bisecting internally and externally the angle A in the points D, E. Prove that D and E lie on the small circle circumscribing ABC.

Solution by HENRY RIDDELL, R.E.



Draw a plane through ABC, and consider the traces of the various planes containing the great circles. Since these planes all pass through one common point, the centre of the sphere, and this point is equally distant from A, B, and C in the new plane drawn, it is evident that the traces of the two planes containing the bisecting great circles themselves bisect the angle at A in this plane as internal and external bisectors. In the same way the trace of the great circle plane bisecting BC of the original triangle bisects and is at right angles to BC in the new plane.

The points of intersection of these traces lie on the lines common to pairs of planes, and are on the circle circumscribing ABC, but this circle is the small circle round ABC, and these points of intersection become the points of intersection of great circles.

16048. (A. M. NESBITT, M.A.)—If three points $(am^2, 2am)$ on the parabola $y^2 = 4ax$ be determined by the roots of the cubic

$$m^3-pm^2+qm-r = 0,$$

the equation of the circle circumscribing the triangle formed by tangents at these points will be

$$x^2+y^2-ax(1+q)-ay(p-r)+a^2q = 0.$$

Solutions (I.) *by* Professor NANSON; (II.) *by* W. F. BEARD, M.A.; (III.) *by* C. M. ROSS *and* F. W. REEVES, M.A.

(I.) The tangent at m is $am^2-my+x = 0$ .....(1).

Hence, if (x, y) is a vertex of the triangle in question, it follows that (1), considered as a quadratic in m, has two roots in common with the given cubic, and therefore also in common with

$$(ap-y)\,m^2-(aq-x)\,m+ar = 0;$$

therefore $ap-y = ra^2/x$, $aq-x = rya/x$;

therefore $apq+aqx-x^2-y^2 = r\,a^2y/x+ray = a^2q-ax+ray,$

and this is the required equation. [Rest in *Reprint*.]

QUESTIONS FOR SOLUTION.

16219. (S. Narayana Aiyar.)—In the reduction of the differential expression $dx/\sqrt{(MN)}$ to the standard form, the values given by Cayley in case (4), $MN = (1+mx^2)(1+nx^2)$ where $m > n$ for x^2, k^2, and $dx/\sqrt{(MN)}$ are $1/m\,.\,[y^2/(1+y^2)]$, $(m-n)/n$ and $(1/\sqrt{m}).(dy/\sqrt{Y})$ (Art. 414, Cayley's *Elliptic Functions*, Second Edition). Show that these values are incorrect and find the correct values.

16220. (Hon. George R. Dick, M.A.)—Show that the determinant

$$\begin{vmatrix} \omega_1+\omega_2-\omega_4-\omega_5, & \omega_1\omega_2-\omega_4\omega_5, & \omega_1\omega_2(\omega_4+\omega_5)-\omega_4\omega_5(\omega_1+\omega_2) \\ \omega_2+\omega_3-\omega_5-\omega_6, & \omega_2\omega_3-\omega_5\omega_6, & \omega_2\omega_3(\omega_5+\omega_6)-\omega_5\omega_6(\omega_2+\omega_3) \\ \omega_3+\omega_4-\omega_6-\omega_1, & \omega_3\omega_4-\omega_6\omega_1, & \omega_3\omega_4(\omega_6+\omega_1)-\omega_6\omega_1(\omega_3+\omega_4) \end{vmatrix}$$

vanishes identically. By attributing an appropriate geometrical significance to the ω's, deduce the truth of Brianchon's theorem.

16221. (Lt.-Col. Allan Cunningham, R.E.)—Prove that

$$(x+1)^{x+1}-(x^2+x+1) \equiv 0 \bmod x^3 \text{ if } x \text{ be odd}$$

and

$$\equiv 0 \bmod \tfrac{1}{2}x^3 \text{ if } x \text{ be even.}$$

16222. (R. Chartres.) — Find integral values of x making (1) x^2+x+1 a cube (*Ex.*: $x = 18$); (2) $8x^3+x^2-1$ a square (*Ex.*: $x = 5$).

16223. (T. Stuart, M.A., D.Sc.)—Show that there is a doubly infinite series of numbers of the form X^8+Y^8 which are algebraically resoluble into two factors; and find the general forms of X and Y when this is possible. Factorize 5^8+17^8, 19^8+7^8, 19^8+23^8, 29^8+25^8.

16224. (Professor Sanjána, M.A.)—Prove that

$$1\,\frac{1}{2}+\frac{1}{2}\,\frac{1.3}{2.4}+\frac{1}{3}\,\frac{1.3.5}{2.4.6}+\frac{1}{4}\,\frac{1.3.5.7}{2.4.6.8}+\ldots = \log_e 4,$$

$$\frac{1}{2}\,\frac{1}{2}+\frac{1}{3}\,\frac{1.3}{2.4}+\frac{1}{4}\,\frac{1.3.5}{2.4.6}+\ldots = 1,$$

$$\frac{1}{3}\,\frac{1}{2}+\frac{1}{4}\,\frac{1.3}{2.4}+\frac{1}{5}\,\frac{1.3.5}{2.4.6}+\ldots = \frac{5}{6};$$

and show how to find the sums of similar series.

16225. (Professor Neuberg.)—On donne un tétraèdre ABCD et un point M; soient A′, B′, C′, D′ les points où les droites AM, BM, CM, DM rencontrent respectivement les faces BCD, CDA, DAB, ABC. Prenons les conjugués harmoniques A″, B″, C″, D″ du point M par rapport aux droites AM, BM, CM, DM, et construisons le tétraèdre A″B″C″D″. Les droites AP, BP, CP, DP, où P est un point quelconque, rencontrent les faces B″C″D″, ... du second tétraèdre aux points A‴, B‴, C‴, D‴. Démontrer que les droites A″A‴, B″B‴, C″C‴, D″D‴ concourent en un même point.

16226. (S. C. Bagchi, B.A., LL.B.)—Show that the curve of intersection of $x = \phi_1(\lambda, \mu)$, $y = \phi_2(\lambda, \mu)$, $z = \phi_3(\lambda, \mu)$ and $x = \psi_1(\lambda, \mu)$, $y = \psi_2(\lambda, \mu)$, $z = \psi_3(\lambda, \mu)$ can be found in the form $x = \theta_1(\lambda)$, $y = \theta_2(\lambda)$, $z = \theta_3(\lambda)$ by a simple quadrature. Examine the case where ϕ and ψ are homogeneous algebraic functions of the same degree.

16227. (T. Stuart, M.A., D.Sc.)—Show that the equations of the sides of the triangle formed by the points *corresponding* to the points where the line $\sum_{r=1}^{r=4} \lambda_r x_r = 0$ meets the Hessian of the cubic $\sum_{r=1}^{r=4} a_r x_r^3 = 0$, $\left[\sum_{r=1}^{r=4} x_r \equiv 0\right]$ are given by $\sum_{r=1}^{r=4} \frac{x_r}{\theta+\lambda_r} = 0$, where θ is a root of

$$\sum_{r=1}^{r=4} \frac{f'(\lambda_r)}{a(\theta+\lambda_r)} = 0 \quad\text{and}\quad f(\theta) \equiv (\theta-\lambda_1)(\theta-\lambda_2)(\theta-\lambda_3)(\theta-\lambda_4) = 0.$$

16228. (C. E. Youngman, M.A.) — If three tangents forming an equilateral triangle A′B′C′ touch a fixed parabola at A, B, C, then (1) the focus S is the inner equiangular (Fermat) point of ABC: (2) the other Fermat point S′ describes a circle (U), orthogonal to the circle A′B′C′; (3) the centre U is a centre of inversion in ABC, isogonal to S; (4) U′, the other centre of inversion, is the image of S′ in the directrix; (5) the circles which pass through S and touch the parabola at A, B, C touch also the circle A′B′C′; (6) the hypocycloid with cusps at A′, B′, C′ touches the circle (U), its radius of curvature at the point of contact being a diameter of (U); (7) $\tan A \tan B \tan C + 3\sqrt{3} = 0$.

16229. (Professor Nanson.) — Prove geometrically that two concentric conics have a pair of conjugate diameters in common, unless their asymptotes are real and interlaced.

16230. (Professor Cochez.)—On considère toutes les coniques passant par quatre points donnés. Démontrer que les polaires d'un point fixe par rapport à toutes ces coniques passent au même point.

16231. (V. Ramaswami Aiyar, M.A.)—In any triangle the axis major of an inscribed conic always passes amidst the in- and ex-centres so as to have three of these points on one side and the fourth on the other; but the axis minor of an inscribed conic, or the directrix of a circumscribed conic, never.

16232. (D. Biddle.)—A square holding has been staked out on a level part of the prairie. But a fire has invaded the scene, and all traces of the square have vanished, except the charred remains of four of the stakes, known to have been on distinct sides of it. At present they form the vertices of an irregular quadrilateral. One of the owners, being a mathematician, says that the data are sufficient to enable him to stake out the square afresh on its original lines. How so?

16233. (W. F. Beard, M.A.)—The radical axis of two circles is midway between the polars of the centres of each circle with respect to the other.

16234. (Professor Lauvernay.)—Lieu du pied P de la perpendiculaire menée d'un point quelconque M de la circonférence circonscrite à un triangle rectangle OBC sur la droite de Simson B′C′ correspondante.

16235. (Saradakanta Ganguli, M.A.) — If S and S′ respectively stand for $(PA/R)(PB/R)(PC/R)\ldots$ to n factors,

and $(P'A/R)(P'B/R)(P'C/R)\ldots$ to n factors,

where A, B, C, ... are the angular points of a regular polygon of n sides inscribed in a circle of radius R, and P and P′ are two inverse points with respect to the circle on the perpendicular from its centre to one of the sides of the inscribed polygon as diameter, prove that $S+S' = S\,.\,S'$.

16236. (W. J. Greenstreet, M.A.)—If

$$8\Pi \sin(\beta+\gamma+2\alpha) + 3\sin \Sigma 2\alpha + 4\Pi \sin(\beta+\gamma) = 0,$$

show that

$$\Sigma \cos\alpha = 0.$$

OLD QUESTIONS AS YET UNSOLVED (IN OUR COLUMNS).

10348. (Professor Déprez.)—On coupe un ellipsoïde par un plan P. Trouver le plus grand parallélipipède inscrit dans l'un des segments de l'ellipsoïde limité par P. Lorsque P est à une distance constante du centre, quelle est l'enveloppe de la face opposée du parallélipipède?

10564. (Professor Syamadas Mukhopâdhyây, B.A.) — Find the chance that a plane which intersects a sphere of radius R also intersects another sphere of smaller radius r, examining the three cases when the second sphere (1) lies wholly within, (2) lies wholly without, and (3) intersects the first sphere.

10679. (W. J. C. Sharp, M.A.)—Prove that the power of the modulus of transformation which affects a concomitant of the k-ary n-ic of order θ in the coefficients, m in the variables, and m' in the contragredient variables is $(n\theta-m+m')/k$.

10749. (Sir R. S. Ball.)—Show that the tension of the string of a prismatic bow is $\frac{\pi^2 EI}{L^2}\left(1 \cdot \frac{\pi^2 D^2}{8L^2}\right)$, where E is the coefficient of elasticity, I the moment of inertia of the section of the bow, L the length of the bow, and D the distance between the centre of the string and the centre of the bow. Also explain why the tension does not vanish when D = 0.

10998. (Professor Catalan.)—Démontrer que

$$P_n(dX_n/dx) - X_n(dP_n/dx) = 2\,[(X_n^2-1)/(x^2-1)].$$

11160. (Professor Shields, M.A.)—On opposite banks of a river, w, at the edge of the water, stand two upright poles A and B. Pole A is 4 ft. higher or longer than pole B, and falls towards pole B, its top end resting on an upright stake S, 20 ft. above the water, in such a manner as to point direct to the top end of pole B. Find the length of each pole and the width of the river.

NOTICE TO CORRESPONDENTS.

It is requested that all Mathematical communications should be sent to the Mathematical Editor,

Miss Constance I. Marks, B.A., 10 Matheson Road, West Kensington, W.

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Thursday, May 9th, 1907.—Professor W. Burnside, President, in the chair.

Dr. W. H. Young and Mr. J. F. W. Whipple were admitted into the Society.

Communications were made as follows:—

"On Secular Stability," by Prof. H. Lamb.

"A Lemma connected with Fourier's Series," by Mr. F. J. W. Whipple.

"A Method for Quadratic Congruences," by Dr. T. Stuart.

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THE

EDUCATIONAL TIMES,

AND

Journal of the College of Preceptors.

Vol. LX.] New Series, No. 555. JULY 1, 1907. {*Published Monthly, price, to Non-Members, 6d.; by Post, 7d. Annual Subscription, 7s.*

COLLEGE OF PRECEPTORS.—The Half-Yearly General Meeting of the Members of the Corporation will be held at the College, Bloomsbury Square, W.C., on Saturday, the 20th of July, 1907, at 3 p.m. C. R. HODGSON, B.A., *Secretary.*

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1. DIPLOMAS.—The next Examination of Teachers for the Diplomas of the College will commence on the **26th of August.**

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The Educational Times.

Imperial Aspects of Education.

THERE need be no hesitation in admitting the general importance of the Federal Conference on Education. So many representative educationists could not engage in discussion and personal intercourse for a week without striking out and interchanging a great variety of fruitful ideas, and impressing more or less vaguely public opinion. Yet it cannot be doubted that the effectiveness of the meetings was grievously marred by conducting the proceedings of the delegates within officially closed doors. To be sure, we shall eventually have a report of these proceedings, but it is only too likely to share the obscure destiny of blue-books, and cannot attract the publicity and interest that the arrangements deliberately excluded at the opportune moment. The promoters exhibited a most unscientific aversion to the open air. The official proceedings ought to have been thrown open to the press, if not directly to the public, when the whole Empire was waiting to hear and to learn. The mere resolutions now available lack the support of the speeches discussing them. Unfortunately, too, the meetings that were open failed to satisfy expectation. Not unfrequently there was painful difficulty in keeping up a continuous discussion; and speakers—educational experts no less than stop-gaps—delivered themselves of their opinions with scant reference to the subject technically under consideration. It is not surprising, then, that audiences dwindled away, or that the open speeches contained little or nothing that could be called new or fresh. There are lessons of experience here, no doubt; but such lessons were in no way needed. The next Conference had better avail itself of the full light of day.

We do not inquire what degree of alacrity was manifested by the Home authorities in sending their representatives to take part in the Conference; but, unfortunately, whether rightly or wrongly, there did exist among the colonial representatives a feeling that a certain reluctance had somehow to be overcome. The Board of Education, however, has now grasped its nettle—carefully, indeed, but still decisively. Elsewhere we publish its precisely worded announcement that, in response to "a strong desire" of persons not specified, "His Majesty's Government consider it desirable to arrange for an Official Education Conference to be held in the year 1911," and that "the Secretaries of State for the Colonies and for India are preparing to send out intimations to that effect." One can readily understand the position of those that dislike such an intervention of officialism. Still, so long as the doors are open and the platforms free, there are plain advantages in having the Government at the head of the movement. It is our way of doing things: a private individual or body starts an idea of comprehensive scope and general importance, and then the Government takes it up. Our statesmen are not yet philosophers. They wait for popular pressure. But the Government really could not be expected to stand by and leave a private association to control a movement of large Imperial interest. The association may well be content with the honours of discovery, and with the confident anticipation that the Government, though committing itself to very little in the meantime, will be kept up to the mark by the force of external opinion.

In this connexion we are glad to see that Prof. Sadler has published an address he delivered in December last at a meeting of the Liberal Colonial Club, offering for consideration a plan for the establishment in London of a Bureau of Educational Information and Statistics for the Empire (1s. Longmans). The Federal Conference showed itself ready for the suggestion by passing unanimously a resolution recognizing "the importance of a permanent central bureau of educational information." Prof. Sadler outlines the scope of the work, and discusses the possibility of organizing such an institution. Let him speak for himself:

> There is no annual report which gives in a collected form the statistics of educational progress in each of the great divisions of His Majesty's dominions. The educational operations of the Empire are nowhere brought into one account. . . . What is wanted, in short, is an annual official report which will give, in an authoritative form, a sufficiently detailed and comprehensive account of the educational systems of the British Empire. In such a report the chief statistical returns illustrating the educational work in each colony and dependency might be presented in tables so arranged as to facilitate comparison. An account should be given, under the different heads of primary, secondary, technical, agricultural, and university education, of the chief signs of advance or of the chief reasons for arrested progress. There should be a review of the efforts which are being made to improve the schools, a sketch of the different educational tendencies at work, and a record of the outcome of important educational experiments. At present the varied experiences of our teachers and educational administrators in different parts of the Empire are not brought periodically into a common focus. The records of this work are scattered and incomplete. The result is that educational workers throughout the Empire

lose much of the stimulus and guidance which they might well receive from a carefully edited and clearly arranged year book of our educational experience. The annual publication of such a work would lead to more cross-fertilization of ideas. Its issue would be necessarily, I think, placed in official hands. No private person, no firm of publishers, no educational society even, could fitly undertake so responsible a task. The editorial staff charged with the preparation of such a year book should have access, as officials, to the regular channels of official information and be part of the great freemasonry of the Imperial Civil Service.

The proposal is enough to daunt any but the most enthusiastic of educationists. Obviously the work must be official, on grounds of both literary and material production. The proper shape would probably have to be developed by the familiar process of trial and failure. The essential point would seem to be who is to write and edit the report: we have in mind a considerable array of similar official achievements that counsel some care in selection, but the difficulty should not be insuperable. Prof. Sadler works his way to the conclusion that his Bureau "should be established upon an official basis apart from any existing Government office," and ultimately "in connexion with the Secretariat of the Imperial Conference, when the time comes for establishing that Secretariat upon an independent basis," the staff being "directly representative of the educational experience of the part of the Empire concerned," and the financial burden being shared. The very title he adopts indicates a great example—the Bureau of Education for the United States, at Washington, a mighty "collector and disseminator of information," which "has done much to further unity of feeling and endeavour among educational workers in the different parts of that country." So here we have the necessary argument of an admirable precedent—admirable, yet not incapable of improvement. At the same time there are some that murmur: "How much better is the half than the whole!"

NOTES.

The Board of Education has opportunely issued a white paper containing a "Summary of Figures relating to State-aided Secondary Schools in England (excluding Wales and Monmouthshire), together with a Memorandum on the management and character of those schools in respect of public control and freedom from denominational restrictions" (Cd. 3538. 1d. Wyman). Summary and Memorandum are based on replies received by the Board to a Circular issued in March, and on an examination of the schemes and other documents now in the possession of the Board. "It appears that there are 316 State-aided secondary schools, educating approximately 62,091 scholars (out of 600 schools educating 104,938 scholars), over which local public control (whether exercised directly by Local Authorities or indirectly by the appointment of a majority of the governors) has been or can be secured, and in which there are no denominational restrictions or requirements." Roughly, that is, one-half. To these may be added 17 schools, educating 2,203 scholars, where, though the trusts require denominational instruction, yet "there is no 'test' (in the sense in which that term is usually understood) for the members of the governing body or the teaching staff," and there is always a conscience clause. As to 260 ordinary endowed schools, educating 42,174 scholars, it is believed they are completely free from denominational restrictions as regards governors and staff, and from requirement of denominational instruction; 112, educating 16,032, are included in the foregoing 600; and it is believed that in many, if not most, of the remaining 75 "the religious instruction given has no pronounced denominational character, and there is little to distinguish them from undenominational schools." The religious difficulty, then, is not very serious in these secondary schools. Other useful matters in the paper do not readily lend themselves to summary reproduction.

The *A.M.A.* for June publishes a very interesting report of the Committee of the South-East Wales Branch of the Association on the opinions of its members on the subject of the co-education of boys and girls. A list of a dozen questions fairly covered the ground. Thus: "Are you of opinion that co-education is good for boys as regards its effect on (1) work, (2) character, (3) manners, (4) social life, (5) corporate life of the school, (6) games?"—and the same inquiry with respect to the influence on girls. The answers, both as to boys and as to girls, are affirmative on the first four points in the proportion of four to one, and on the last two points in the proportion of two to one. "Heads of schools are almost absolutely unanimous on all these points, the only dissentient being one who disapproves of association of boys and girls in games." Again: "Does the presence of girls exert a prejudicial influence on the discipline of boys' classes or not?" and "Does the presence of boys affect injuriously the reserve natural to girls or not?" "More than four to one of the replies indicated that the presence of girls in boys' classes exerts no prejudicial influence on discipline, while eight were loud in their praises of its beneficial effects. The absence of any evil effects on the reserve natural to girls from the presence of boys was affirmed by an even greater proportion." "More than two-thirds regard an age-limit as inadvisable, especially in view of future association in university colleges; the others range through every year from fourteen to eighteen; one assistant master would make co-education cease at the age of six." On the crucial point of what is called "boy-and-girl nonsense"—sentimentality generally—"three people regard co-education as without special effect; one thinks it depends much on the treatment of the matter by the head of the school; the rest, heads and assistants alike, are distinctly of opinion that it has no prejudicial effect; nineteen, on the contrary, definitely say that it lessens both sentimentality and instances of objectionable behaviour of all kinds." The area of the inquiry is limited, and it would be rash to infer similar results in like proportions in any other area. But *pro tanto* the inquiry is instructive, and the full report should be studied in the columns of our contemporary.

In his very interesting and suggestive report on the school system of Cardiff Sir Philip Magnus outlines the present requirements of the working population as regards technical and commercial instruction, reviews the existing arrangements for meeting these requirements, and sets forth such modifications as he considers necessary for the establishment of a reasonably complete and efficient system. The

main difficulties have naturally arisen from a piecemeal development. Sir Philip advises that the present agreements between the City Council and the College should be ended, so as to give the Corporation an absolutely free hand. He draws the line between the work of the Technical School and the work of the evening department of the College, and co-ordinates them advantageously for both; and he lays stress on "the organic connexion that should exist between the College and other educational institutions under the direction and control of the City Council." Changes call for money; but Sir Philip will be content with one-tenth of the cost of the recently erected Law Courts and Town Hall. There are lessons for many other towns in the facts, and especially in the principles, of this report.

When American education is held up as an example to English educators, the sense of inferiority may be somewhat relieved by considering the answer given by the New York *Sun* to its question: "Why do the public-school children of New York speak and write such wretched English?" The answer is drawn directly from a flood of correspondence during recent months. "These communications," says our contemporary generally, "have revealed the fact that many of the instructors in the employ of the Department of Education are themselves grossly ignorant of the first principles of composition and careless in their use of words." More particularly:

> Of the several hundreds of letters from teachers received by the *Sun*, very many have been unfit for publication without being practically rewritten. In some cases it has been actually impossible to find out what the writers were trying to say. Whole pages of manuscript have been absolutely meaningless. Dozens, if not scores, of teachers have sent to this paper communications which a properly instructed child of ten would blush to own. The letters of this description have been so numerous as to make us wonder if the majority of teachers, men and women, regard the accepted rules of capitalization and punctuation and grammatical construction as oppressive, to be resisted at any cost.

If this be so, then it follows that "from such instructors a child cannot learn the English language," and that "the effect of correct precept" at home "must be neutralized by the example of the teacher, whose authority in these subjects is not likely to be disputed." "What shall be done?" asks the critic. "The Board of Education," he goes on to say, "must know what the conditions are. If it does not know, an investigating committee need not go far to find the truth." It is easy enough to expect too much from children, in any case; but what can be said for teachers whose English composition evokes such a protest from an American journal?

The new volume—Volume 17—of the valuable series of "Special Reports on Educational Subjects" issued by the Board of Education surveys "Schools Public and Private in the North of Europe" (Cd. 3537, 8d., Wyman). It is the work of Mr. J. S. Thornton, the outcome of a close study of fourteen years. The countries dealt with are Sweden, Finland, Norway, and Denmark; then one separate chapter is devoted to the Law of 1904 in Sweden, which introduced many and important changes, and another is concerned with the People's High Schools in all the four countries. Mr. Thornton points to three matters that have more special bearings upon problems of our own: (1) the hearty co-operation of public and private effort—"a co-operation which has no doubt been encouraged by the heavy pressure of modern educational needs upon the financial resources of the State"; (2) the establishment of one standard of examination for the pupils of all secondary schools whether public or private, which "is of great interest in connexion with the recent report of the Consultative Committee of the Board of Education upon a School Leaving Examination"; and (3) the method, adopted over thirty years ago in Sweden and just followed in Denmark, of training secondary-school teachers under the head masters of selected secondary schools. Mr. Thornton keeps his eye open upon the private schools. "Fully one-half of the higher school teaching in Norway is done by private men who owe very little to public funds, but very much to State recognition"; nay, "the private school, or rather a few select spirits nurtured in the freedom of the private school, has been the lever in the last sixty years by which the chief changes in the State schools, necessary to bring them into touch with the times, have been brought about." But these are "not private schools as we know them: they are neither public nor private, but something between—schools which, giving guarantees and yet retaining t eir freedom, combine in themselves some of the strongest points of the public school and the private school." The account of the People's High Schools, originated by Bishop Grundtvig, is especially interesting. These are for adults, and "they are conditioned only by the needs and requirements of the population around, as these are apprehended by the teachers themselves and their friends"; and, notwithstanding—or by reason of—such freedom, "the State gets good value for the large sums of money expended on them."

"J. S. T." writes: "English people are spending their holidays in Denmark much more than formerly, especially those that are interested in social and educational movements. And so a few hints about dictionaries, phrase books, and guide books may be useful. The best dictionary for ordinary purposes is Magnussen's 'Dansk-Norsk-Engelsk Ordbog' (Copenhagen, 1902; price $1\frac{1}{2}$ kroner, say 1s. 8d.). To read Danish is very easy to an Englishman: to speak it or understand it when spoken is another thing; and for that purpose there is nothing better than Miss Henni Forchhammer's 'How to learn Danish' (Copenhagen, 1906; 2 kroner). The pronunciation all through the book is made as clear as can be by exact phonetic methods. Useful phrases are given under thirty-one different heads, and there are thirteen interesting descriptive texts, besides the essentials of Danish grammar and a full vocabulary. There is no thoroughly good guide book to Denmark in English, although Mrs. Bröchner's 'Danish Life in Town and Country' (3s. 6d., Newnes) will serve some of the purposes of a guide book. But in Danish the Turist Union's Handbook, with its thirty maps ('Danmark: Haandbog for Reisende,' 3rd ed., Copenhagen, 1906; price 4 or $4\frac{1}{2}$ kroner), is everything that can be desired. The text will present no difficulty with Magnussen and Miss Forchhammer as helps. Danish throws much light on English, and is especially interesting to Englishmen of the North."

SUMMARY OF THE MONTH.

The President of the Board of Education, replying to a resolution of the Northern Association of Baptist Churches, passed at the annual assembly at Newcastle, wrote (June 7):

I beg you will accept my assurance that, notwithstanding the rejection of the Education Bill of last year by the House of Lords, the Government will in the very next Session of Parliament press forward another Bill with all the resources at their command. Thus, during two of the first three years of the life of the Government we shall have been engaged in the most earnest endeavour to place our educational system upon a satisfactory basis. Without an amendment of the law, to which the consent of the Lords must be obtained, I have no power by administrative action, whether with or without a grant of public money, to settle the question. Much has been said as to my powers in this respect, but by persons who, I can assure you, have not made themselves sufficiently acquainted with the limitations placed upon me by the existing law. As I have now been enabled to give a definite pledge of a Bill next year embodying the fundamental principles upon which the Liberal party asked for the support of the electorate at the last election, it has been thought wiser not to proceed this Session with the Special Religious Instruction Bill. Certain Nonconformists have pointed out that, if this Bill were allowed to pass by the Lords, it would be used as an argument against a more comprehensive measure which alone could be satisfactory to us, and in this view of the case the larger and more determined, though not so immediate, course has been adopted.

Mr. Thomas Lough, M.P., Parliamentary Secretary to the Board of Education, distributed the prizes and certificates awarded by the Liverpool Education Committee (June 7). He spoke strongly in favour of better treatment of teachers, and took credit to the Board of Education for constant efforts in that direction. He expressed impatience with criticisms of the Government policy, and claimed that the Government had actually relieved, with the aid of the national Exchequer, the burden of education rates by providing three-quarters of any excess over 1s. 6d. in the £1. The Government had done another great work by passing the Feeding of School Children Act, extending to the country generally principles which had been followed in Liverpool for some time, and which tended to humanize our schools, and did a great deal to alleviate the sufferings of many children. He contended that the Government, so far as education was concerned, had a good record during the sixteen months of its existence, and had demonstrated its full sympathy with educationists everywhere. He was deeply sorry their efforts were sometimes blocked by quarrels about religion, and he would fain see those differences settled and attention concentrated on the vital importance of the real work in the schools and the necessity of uniting to put the educational system of the country on such a basis as might enable it to compare favourably with that which existed in any other civilized country in the world.

The Archbishop of Canterbury, presiding at the annual meeting of the National Society for Promoting the Education of the Poor in the Principles of the Established Church, observed that it was the intention of the Government next year to undertake, by means of a comprehensive Bill, the great task of putting the educational system of the country in order. If that meant that they would bring forward an Education Bill in the right sense of the word—a Bill that was fair and gave adequate consideration alike to history, to the duty of trustees, and to present-day facts, and was calculated, on these lines, to promote educational advance—he would not only gladly welcome it, but co-operate to the utmost of his power in bringing it into effective life. But he would not support a measure which might be meant to pay for Parliamentary support in other fields. Lord Hugh Cecil moved a resolution, which expressed the Society's views that any coming settlement of the education difficulty must include religious teaching as an integral feature of school life, and must provide for the equal treatment of all forms of faith in elementary schools. The resolution was carried.

At a largely attended special meeting of the Education Committee of the National Free Church Council, held on June 6 at the Memorial Hall, Farringdon Street, the following resolutions were passed:—

(1) That this Committee expresses its profound regret that some way has not been found to bring relief to passive resisters, and that a Bill for this purpose should have been first introduced and then withdrawn.

(2) At the same time, the Committee expresses its satisfaction at the explicit pledge of the Prime Minister that next Session a comprehensive Education Bill will be introduced, and at the assurances which it has received that the Bill will be drawn on lines of sound principle, such as will command the support of all friends of civil and religious liberty, and also that it will be pressed forward with the utmost determination. In view of this, the Committee expresses its hope that all Free Church Councils will take measures to press upon their constituencies during the autumn the principles that must govern a final educational settlement.

Subsequently a meeting of the National Passive Resistance Committee was held, Dr. Clifford presiding, and the following resolution was passed:—

That the Committee expresses its keen regret at the withdrawal of Mr. M'Kenna's Bill, and urges the members of our Citizens' and Passive Resistance Leagues throughout the country (1) to immediately shape their plans for continued and extended resistance to the Education Acts of 1902 and 1903; (2) to organize meetings for appeals to Free Churchmen—and other citizens who are opposed to the present unjust Acts—for their adhesion to the principles and practices of passive resistance; (3) to note and expose the violation of liberty of conscience and of justice in connexion with the working of the Education Acts in their own locality, and now being continued under a Liberal Government; (4) to arouse citizens generally to the recognition of the flagrant injustices inflicted on the country by the grasping and intolerant clericalism of the Roman and Anglican Churches; and (5) to demand from the Liberal Government speedy and complete deliverance from the scandalous situation created by the late Tory Administration, by which hundreds of citizens have already been thrust into prison, and nearly 100,000 summonses and distraints have taken place, which things will be repeated as long as the present law is unrepealed.

An appeal is also to be issued for funds.

A deputation organized by the British and Foreign School Society, and consisting of the representatives of twenty-five training colleges, waited on the President of the Board of Education (June 5), with a view to securing the reconsideration of the refusal of the Board to allow after this year selected students from the training colleges to take a third-year course of study abroad. The deputation presented a memorial embodying the arguments in favour of the retention of the privilege, which had proved of great advantage to students, colleges, and elementary schools, since it was first granted in 1893. Mr. M'Kenna, in reply, while acknowledging the force of the arguments, pointed out other factors which had to be taken into consideration, the chief of these being the necessity of securing the best use of the public money from which the expenses of the travelling students were defrayed. He promised, however, that the matter would have his careful attention.

The Incorporated Association of Head Mistresses held its Thirty-third Annual Conference on June 7 and 8 at the Grey Coat Hospital, Westminster. Miss Gadesden, M.A. (Blackheath), delivered her presidential address, which was chiefly devoted to the advantages and disadvantages of examinations. Mrs. Woodhouse (Clapham) was elected President for the years 1907–9. Several papers were read and discussed, and the following resolutions were carried:—

That it is desirable to encourage the establishment of more higher elementary schools and fewer secondary schools.

That in both higher elementary and secondary schools it is better to deal separately with boys and girls.

That this meeting records its emphatic disapproval of the very definite manner in which the curriculum and time-table of secondary schools are now governed by the Regulations promulgated from time to time by the Board of Education. It is profoundly convinced that the destruction of the initiative of the teacher which is thus being effected must result in much stagnation of educational thought at its principal sources.

That this Conference regards as most unsatisfactory the limitation of sphere and inferiority of status assigned to women on the Inspectorate of the Board of Education. It is of opinion that duly qualified women should be eligible for places in all grades of the Board's Inspectorate, and that vacancies should be advertised or otherwise published, in order that the highest attainable excellence in the appointments should be secured.

That a Committee be appointed to consider the means (if any) of bringing the heads of secondary schools for girls in the colonies,

India, and the dependencies into touch with the Association of Head Mistresses.

That the Conference would welcome on educational grounds the substitution of the metric system for that of existing Imperial standards.

Miss Burstall's invitation for the Conference to meet next year at the Manchester High School was accepted.

An extraordinary general meeting of the Incorporated Association of Assistant Mistresses in Public Secondary Schools was held at Manchester High School on June 22. Reports from various Sub-Committees were dealt with; a demonstration lesson in French (oral method) was given by Miss Adamson; and papers were read on "Education in America" (by Miss Dawson) and on the present study of English in American and English secondary schools (by Dr. Bertha M. Skeat).

The Secretary to the N.U.T. sends us a long table of "typical cases showing the crowded state of many of the class-rooms in schools under the West Ham Council." He writes:

Owing to the dismissals and resignations of teachers in West Ham on account of the breach of faith on the part of the Council, many of the class-rooms are in an overcrowded condition, as the Council are unable to fill up the places of the teachers who have been displaced. At Custom House Boys' School there are 116 on the roll in a class-room built for 60 and 113 actually present; at North Street 104 on the roll in a 60 class-room and 102 actually present; at South Hallsville Girls' School in a 62 room there are 102 on the roll and 100 have been present; at Drew Road Boys' School there are 104 on the roll and 99 in actual attendance in a room built for 70; in St. Francis's Girls' School there is a room built for 50 with 81 on the roll and 78 in attendance; and at Water Lane (boys) there are 95 on the roll and 92 in actual attendance in a room built for 60. These figures are taken from returns compiled since May 27, and the attention of the President of the Board of Education is to be called to them in the House.

On Commemoration Day Dr. Harford, Principal of Livingstone College, claimed that the college should be supported on ethical, economical, and educational grounds—ethical, because missionaries going to dangerous and isolated stations should be taught to care for their own health as well as to relieve the sufferings of the natives; economical, because the college training would increase the usefulness of missionaries, and save money spent in medical expenses; educational, because he considered that scientific training prevented missionaries from working in too narrow a groove, and they should be able to impart simple instruction in the laws of health to the people among whom they worked. He appealed to the great denominational missionary societies to make more use of the college. There was a deficiency of over £500 on the funds, and further help was urgently needed in order that the work might be carried on with true efficiency.

The British Association will meet at Leicester on July 31, under the presidency of Sir David Gill. On August 1 Section L (Educational Science), over which Sir Philip Magnus will preside, will meet Section H (Anthropology), to discuss the measurement of development in childhood, with particular reference to the recommendations of the Physical Deterioration Committee. August 2 will be occupied with a discussion of the scholarship system: papers will be read by Miss J. Cleghorn, member of the Executive of the National Union of Teachers; Miss S. Heron, Head Mistress of the Wyggeston High School for Girls, Leicester; the Rev. A. A. David, Head Master of Clifton College; Prof. H. A. Miers; and others. The curricula of secondary schools will be discussed on August 5, in connexion with the report of a Committee on that subject. On August 6 there will be a continuation of the discussion started by Prof. A. Smithells at York on the possibility of extending the scientific spirit to domestic subjects in girls' schools.

A meeting, convened by the Modern Language Association and L'Entente Cordiale (the Anglo-French Association) was held (June 5), by permission of Lord and Lady Weardale, at 3 Carlton Gardens, when an address was delivered by Miss Williams on the work of the International Guild at the Musée Pédagogique in Paris, of which she is the head, and a scheme for putting the institution on a permanent basis was considered. The work has received the approval and co-operation of the Board of Education in England and Wales, and of the Scotch Education Department, and great help has been afforded by the University of Paris and the French Minister of Public Instruction. The institution is now self-supporting, but no proper provision has been made for any remuneration for Miss Williams. It is now proposed to raise a fund and create a trust in accordance with the French law for the permanent endowment of the Guild. The income thus provided would be applied (1) to providing salary for a head and staff; (2) to providing scholarships; and (3) to the establishment of an inquiry bureau. The scheme has been laid before the Board of Education, and in a sympathetic letter to the President of the institution they state that any means which may prove feasible for ensuring the future continuance of this work in the cause of international study and mutual understanding would have their heartiest approval and good will. Miss Williams gave a detailed account of the origin and growth of the Guild, and the reasons which had made it desirable to transform a private institution into a public academy. Lord Fitzmaurice moved the appointment of a Committee to take such action as might be thought desirable to bring to the notice of the public the educational work of the Guild, to collect sufficient funds to place it on a permanent basis, and to formulate a scheme which should ensure the proper administration of those funds. Prof. Sadler seconded the motion, which was unanimously adopted. A Committee was then appointed.

The School Orchestra is in the ascendant. A grand demonstration was made (June 22) at the Alexandra Palace, when a thousand boys and girls from the orchestral classes of elementary schools in London and district performed *en masse*, on the occasion of their annual concert. The programme included:—"War March of the Priests" (Mendelssohn); "Hibernia," selection Irish airs (Pattison); "Daughter of the Regiment," selection (Donizetti); "Norma," selection (Bellini); two gavottes (Bach); minuet (Boccherini); "Military March" (Pattison). Eight or nine years ago the Head Master of All Saints' School, Maidstone, decided to start a school orchestra to help the vocal music. Since then something like five thousand school orchestras have been started. It has been noticed by the Inspectors that the progress of those schools that own an orchestra is much greater than others. The children buy their own instruments and music, and pay 3d. for the weekly lesson. A good proportion of the pupils proceed to the evening schools, and in many instances to the local orchestral society. An endeavour was made last year to form an orchestral union, so as to foster the study when the children left school, and it is still hoped that this will be realized at an early date.

A "vacation school" scheme has been approved by the School Committee of Dundee School Board, and they have agreed to give the promoters the use of Dudhope School, which is favourably situated for the purpose, being close to Dudhope Park, as a suitable place for the children in the event of bad weather. The main idea is to provide amusements for the children in the parks, and to take them into the country or to the seaside. In the event of bad weather the method of employing the time would be entirely recreative, embracing such subjects as singing, dancing, drill, fancy sewing for the girls, and manual work for the boys. The promoters of the scheme recognize that not only in Dundee, but in every large city, there are a great many children, not only the dwellers in the slums, but the children of ordinary working people, who have no means of securing healthful enjoyment during the summer holidays. Some time ago a communication was addressed to the Education Department, asking whether "My Lords" would recognize some sort of summer exercises, and the reply was practically that the Department had no objection, but desired first to be informed of the results of an experiment. The vacation school is officially recognized by the American authorities and supported by public money. In Dundee it will be dependent on voluntary effort. A committee composed of representatives from the Town Council, the School Board, and the Social Union will be organized, and an appeal made to the public.

The City of London School for Girls, which claims the only woman Wrangler of the year, was opened nearly thirteen years ago. Last year three of the Newnham College scholarships were gained by the school. This year Miss E. M. Smith, a past pupil of the school, who proceeded to Newnham College three

years ago, is equal to Sixteenth Wrangler in the Cambridge Mathematical Tripos. Another past pupil, Miss C. Green, also of Newnham College, has gained a First Class in the Natural Sciences Tripos.

At a recent meeting of the Art Teachers' Guild, held at St. Saviour's and St. Olave's Grammar School, New Kent Road, S.E., papers were read, and brisk discussion followed, on (1) "Drawing in conjunction with Modelling and Manual Work," (2) "The Training of Art Teachers," and (3) "Methods of disseminating Ideas of Art, and of developing Public Taste." There was a large attendance, many members coming from distant centres.

In response to the memorial presented to the First Lord of the Treasury on December 4 last with reference to the organization of Oriental Studies in London, the Lords Commissioners of the Treasury have appointed a Committee to consider the subject. The members of the Committee are Lord Reay, Lord Redesdale, Sir Alfred Lyall, Sir Thomas Raleigh, and Mr. A. R. Guest. Mr. P. J. Hartog, Academic Registrar of the University of London, will act as Secretary.

The nominees of the Crown to the Governing Body of the Imperial College of Science and Technology (the London "Charlottenburg") are Lord Crewe, Sir Julius Wernher, Sir William White, Sir Francis Mowatt, and Dr. Donald MacAlister. These have accepted nomination. The correspondence is still proceeding as to the sixth Crown nominee. The representatives of the Board of Education are: Mr. Arthur Acland, Dr. Glazebrook, Mr. F. G. Ogilvie, and Mr. J. C. Sykes.

According to the *Tribune's* New York correspondent, the establishment of a great Hebrew university is proposed, which shall include all the leading institutions throughout the States, with the Jewish Theological Seminary of New York at their head. A preliminary endowment fund of £2,000,000 is suggested, and it is proposed to adopt the German system of instruction. The projectors declare that such a university is necessary to teach young Jews their religion, while it would at the same time greatly develop Jewish scholarship. The scheme has locally aroused great interest. The *Evening Post* frankly laments the suggestion, believing that it would emphasize racial differences, and be a serious blow to liberalizing tendencies in the universities, which have many Jewish professors. The journal adds that a Hebrew university seems unnecessary.

An Australian correspondent writes: "According to a Blue Book just issued by the Queensland Government, there were 456 schools established on January 1, 1907. The population of the colony is about 520,000. The classification of the schools is as follows:—

Class.	Average attendance.	Schools.
I.	over 800	4
II.	600 to 800	6
III.	400 to 600	16
IV.	280 to 400	30
V.	160 to 280	57
VI.	81 to 160	103
VII.	40 to 80	150
VIII.	30 to 40	28
Unclassified	below 30	62

Teachers in the Queensland State Schools appear to be well paid; for, in looking through the attached lists of the position and emoluments of teachers, one notices the names of husband, wife, and daughter, as head teacher at the Central Boys' School, Townsville, head teacher in the girls' school, and assistant teacher respectively: these three draw between them £660 a year."

The National Association for the Promotion of Technical and Secondary Education was wound up on June 30. The reason given is lack of financial support. However, the Executive Committee "venture to congratulate the members upon the accomplishment of the primary objects for which the Association was founded twenty years ago, and to express the conviction that in the performance of the important duties which, as a natural sequence, have followed upon that accomplishment the Association has contributed largely to a greatly improved educational organization and to a quickening of zeal for even more effective progress in that behalf."

The Duchess of Devonshire held an "at home" at Devonshire House, Piccadilly, in support of the National League for Physical Education and Improvement (June 11). The Duke of Devonshire said that, although the Departmental Committee found nothing to prove that progressive physical deterioration existed, still there was much that was grave in the state of affairs disclosed by their inquiry. Lord Balfour of Burleigh said it behoved them to be warned in time, and take care that the progressive deterioration mentioned by the Duke did not begin to exist, and that, so far from deterioration, there should be improvement in the physique and intelligence of our citizens. The Bishop of Ripon, in expressing the thanks of the League to the Duke and Duchess, said the question of the physique of the people was one which from one point of view was a little wearisome, because of the insistence with which it had been spoken of recently; but underneath it there was a solid patriotic feeling in the hearts of all—a determined desire that the children of the country should grow up thriving and strong.

Dr. E. J. Routh, of Peterhouse, "the father of Cambridge mathematics," who has coached more Senior Wranglers than any living man, died after a lingering illness. He was Senior Wrangler in 1854, and was one of the strongest advocates for retaining the order of merit during the recent controversy about the Wranglership. Dr. Routh was born in Quebec in 1831, being the son of Sir Randolph Routh, Commissary-General; and married in 1864 the eldest daughter of Sir George Airy, the Astronomer-Royal. He was educated at University College, London, and Peterhouse, and became a coach in 1855. He has had 27 Senior Wranglers and more than 40 Smith's Prizemen amongst his pupils. He retired in 1888, when his portrait by Herkomer was presented to his wife by his pupils. He was a member of the Council of the Royal Society from 1888 to 1890. Among his numerous publications were treatises on "Rigid Dynamics," "Statics," "Stability of Motion," "The Dynamics of a Particle," and other allied subjects.

UNIVERSITIES AND COLLEGES.

(*From our own Correspondent.*)

Cambridge. At last the May term is over and our visitors have departed; dull depressing weather prevailed, but the spirit of enjoyment was abroad and triumphed over all climatic obstacles. At a time when every one was busy huge audiences assembled to hear what eminent strangers could tell us of things whereof we are ignorant. Sir Aston Webb as Rede Lecturer discoursed on architecture with special reference to the educational side of the question, while Commendatore Boni delivered a fascinating lecture on recent discoveries at Rome. On June 7 there passed away two of our most eminent residents, two of the men who have made Cambridge what it is—Dr. Routh and Prof. Newton. The work of both has received ample acknowledgment from the outside world: here in Cambridge we mourn the loss of loyal friends and generous helpers. Prof. Newton has bequeathed his scientific library and collections to the University, with a money legacy to further the work which he had so much at heart.

Dr. James, Provost of King's, has been obliged to resign the post of Director of the Fitzwilliam Museum, owing to press of college duties, and a very interesting position has arisen in consequence. The Fitzwilliam Syndicate have issued a report in which it is proposed to institute the office of Assistant Director, at a stipend of £50 per annum—an amount which is to be obtained by a reduction of the Director's stipend from £300 to £250. The report was signed by four members only, including the Vice-Chancellor, who, it is presumed, appended his signature for conformity. A discussion arose in the Senate on this precious document. It seems that the Director is to be required to attend three hours on every day that the Museum is open, while the Assistant is to be allowed to take his place during one hundred of such hours. The report was ambiguously worded, but it was

variously estimated that the Director would have to attend 653 or 699 hours per annum. The Registrary, Mr. J. W. Clark, in a scathing speech, pointed out the iniquities of a most extraordinary report, suggesting that the regulations were intended for a housekeeper with a keen eye for dust and cobwebs and a bunch of keys at his girdle, ready to open the preserve cupboard and the linen closet and display their goodly wares to the admiring foreigner—not for a gentleman and a scholar who works with unsparing energy at subjects which he renders accessible by his courtesy and illuminates by his learning. This ill-fated report received its *coup de grâce* from Prof. Jackson, and a requiem was added by Mr. Durnford and Dr. Glaisher.

We are getting near the end of the old-time Mathematical Triposes: this year was signalized by the fact that eight out of the first nine Wranglers were from Trinity, a college which had nobody in the last ten Junior Optimes. Three wooden spoons had to be distributed—Clare, Corpus, and John's being the lucky colleges to provide the successful candidates. The humour of the gallery seems to have evaporated, and it is hoped that in future years our budding wits will practise their art on our big degree days. If they do not, Senate House tickets will be at a serious discount.

On June 12 we had our great field-day. Honorary degrees were dealt out with an impartial hand to the Prime Minister and the Secretary for War on the one hand, and to Lord Curzon and Lord Milner on the other. Lord Elgin, Sir Clements Markham, Mr. S. H. Butcher, and others made up a truly eclectic and distinguished list. The Liberal officials were well received with the genial courtesy which even the undergraduate extends to those of whom he respectfully disapproves; but the reception given to Lord Milner was of unequalled enthusiasm, and Lord Curzon had almost as warm a welcome.

These have been busy times on the river and the cricket field. Third Trinity lost their pride of place to First Trinity, who were in turn deposed by Trinity Hall after one of the grandest races ever seen on the Cam: much of the credit of the victory is due to the magnificent rowing of the 'Varsity stroke, D. C. R. Stuart, who was rowing seven in the Hall boat. Our cricket team have shown variable results, but there is no doubt about it that the side contains the names of men who will be well known some day in the cricket world. University teams can hardly make much showing when harried by examinations and upset by May Week festivities. The number of balls in May Week increases every year, and, though the smaller college affairs are voted more enjoyable, there is no lack of patronage for the larger affairs.

The next Vice-Chancellor is to be Dr. Mason, Master of Pembroke.

The Board of Anthropological Studies recommend in a report to the Senate: (1) That a diploma in Anthropology be established; (2) that an advanced student who has studied some branch of Anthropology under the direction of the Board, and has presented a thesis, which thesis has been approved for a certificate of research, shall, on the payment of such fees as the Senate may from time to time determine, be entitled to a diploma testifying to his competent knowledge of Anthropology; (3) that any member of the University having graduated before the date of the establishment of the diploma, who has presented a thesis on some branch of Anthropology, which thesis has been approved by the Board, shall, on the payment of such fees as the Senate may from time to time determine, be entitled to a diploma testifying to his competent knowledge of Anthropology.

The Senior Wrangler of the year is Mr. George Neville Watson, of Trinity, formerly of St. Paul's School, London, son of Mr. G. W. Watson, Powis Square, W. The Second Wrangler, Mr. Herbert Westren Turnbull, also of Trinity, and formerly of Sheffield Grammar School, is the son of Mr. William Peveril Turnbull, H.M.I.S., who was Second Wrangler in 1864, and whose mathematical works are well known in the schools.

Trinity is triumphant: she claims the first five Wranglers and three of the four bracketed sixth; and she has twelve out of the first fifteen. Mr. R. A. Herman, of Trinity, who was himself Senior Wrangler in 1882, coached all the eight Trinity men of the first nine. An Australian, Mr. J. R. Wilton, is fifth; an Indian, Mr. M. V. Bhide, is twentieth. There is only one woman Wrangler—Miss Eva Maria Smith, of Newnham, formerly of the City of London School for Girls; she is placed equal to the sixteenth. There were sixty-four candidates in the Tripos.

At a Congregation held on June 6 the grace for modifying the regulations for the Slade Professorship of Fine Art in the direction of increasing the duties of the Professor, diminishing his power to accept other appointments, and increasing the permanency of his tenure was opposed, but was carried by 104 votes to 19.

The recommendations contained in the Report of the Special Board for Mediæval and Modern Languages for amending the present provisions of the Tripos were also opposed, partly on the ground of the introduction of Italian, Spanish, and Russian into the examinations. They were, however, eventually carried by 154 votes to 11.

London.

It is evident (says the *Lancet*, June 15) that the present position of the movement for the concentration of earlier medical studies under the University of London is receiving much consideration. A letter from Mr. Cosmo Bonsor, the Treasurer of Guy's Hospital, containing a resolution on this subject recently passed by the teachers in the medical school of that hospital, is published in our columns to-day. In forwarding this resolution to the Principal of the University, Mr. Bonsor states that it must not be construed as adverse to the principle of concentration, but only to the particular proposals at present sanctioned by the University. As these particular proposals are the outcome of the most careful consideration of the question, extending over many years, and have been before the public a considerable time, this negative attitude towards them is not very helpful. A meeting of the Faculty of Medicine of the University of London has been called to consider the present position of this question for Friday, June 28. Perhaps some useful suggestions as to possible modifications of the present scheme may result from the deliberations of the Faculty. It seems clear that some compromise between the conflicting interests of teachers of different parts of the curriculum and of competing institutions must be arranged before any useful report to the Senate can be agreed upon. If this is impossible, it would appear necessary for the Senate to set up a sort of informal commission to take evidence upon the subject and to prepare a report for the guidance of the Senate upon this urgent and difficult question.

At University College the Foundation Oration was delivered by Prof. A. F. Pollard, on "National Character." Prof. Pollard analysed national character rather from an historical than from a social standpoint, emphasizing the novelty of national character, and even of national consciousness. Nationality was something more and something less than race, and it implied an essentially modern idea. It was due to differences of environment and differences of history. The modern ambition to make the Empire the greatest secular influence for good was a noble one, and it expressed a novel development of the national character.

Manchester.

It has been decided to form a Manchester Federation of University Women, "to afford means of communication and of united action on matters affecting the interests of women." It is hoped that the Federation will enable an increasing part to be played by university women in matters of civic and national interest. It will probably make its influence most felt in the former direction at first; for the rapid development of civic life in a large centre such as Manchester makes it desirable that women who have had the advantage of university training should be able to voice their opinion from time to time. It is thought, too, that women from other universities visiting Manchester may wish to be put into communication with university women here. Beyond these points no definite objects have been adopted; the Federation will hold a waiting brief and act as circumstances may direct. Miss Burstall was elected President of the Federation, and among the Vice-Presidents are Miss Hilda Oakeley, Mrs. Tout, and Dr. Merry-Smith. The Hon. Secretary is Mrs. Meredith, 8 Wolseley Place, Withington.

Liverpool.

Dr. Alex. Hill and Sir Thomas Raleigh, Commissioners of the Treasury, have made to the Liverpool Corporation a report of great interest, dealing in detail with the several departments of the University in view of the renewal of the grant of £10,000 to the University by the Corporation. The Commissioners speak generally in very high praise of the work that is being done at the University, and the Finance Committee of the Corporation have recommended that the grant be renewed for 1907, and that £1,000 of the amount be devoted for Liverpool scholarships, including the assistance of undergraduates and postgraduates and the payment and remission of fees.

Sheffield. The Court of Governors adopted (June 7) a number of new ordinances and variations of existing ordinances. The most important step was provision for attendance at a course of evening study for the Arts degree. This ordinance, which was the result of representation by the teachers of the city, follows on the lines of ordinances already adopted at Liverpool University. The principal amendment in the Arts degree was one making Latin no longer compulsory in the Final, but alternative with Mathematics. New ordinances were adopted for diplomas in Education and in Modern Language Teaching, and the Associateship in Engineering was made open to engineering students, partly by a day course and partly by an evening course. The President of the Students' Council for the time being was elected a member of the Court of Governors.

Aberdeen. Following the other Scottish universities, the University Court has raised the fees for the ordinary graduation classes in Greek, Latin, English, French, German, Logic, Moral Philosophy, Political Economy, Education, History, and Mathematics from three to four guineas per session.

THE EDUCATIONAL LADDER.

Oxford.—Hertford Scholarship: Ronald A. Knox, Scholar of Balliol. Boden Sanskrit Scholarship: Har Dayal, Commoner of St. John's. Abbot Scholarship: Edward N. Medd, Exhibitioner of Keble.

Cambridge.—The Open Stewart of Rannoch Scholarships in Greek and Latin: R. Hackforth, Trinity, and W. H. Duke, Jesus. The Restricted Scholarships: T. E. J. Bradshaw, Trinity, and B. C. Roberts, Pembroke. The Open Stewart of Rannoch Scholarships in Hebrew: A. Cohen, Emmanuel, and R. H. Willey, Caius. For the Restricted Scholarships there were no candidates. The Open Stewart of Rannoch Scholarship in Sacred Music: J. F. Chubb, Christ's. No candidates for the Restricted Scholarships. John Winbolt Prize: J. E. Sears, B.A. St. John's, for essay "On the Longitudinal Impact of Metal Rods with Rounded Ends." The first Tyrwhitt Scholarship is awarded to J. H. Bentley, B.A. St. John's; the second to F. S. Marsh, B.A. Selwyn. Mason Prize for Biblical Hebrew: F. S. Marsh, B.A. Selwyn.

Clifton.—Besides the confirmation of all scholarships already held: Cay Scholarship for Mathematics, H. N. Tait; Modern Language Scholarship, O. M. Tweedy; Roquette Palmer Palmer Scholarship, O. M. Tweedy; Old Cliftonians' Scholarship, F. N. Tribe; Junior School Scholarship, E. K. Wakeford. Under seventeen (the Guthrie): T. F. Higham, Classics (Clifton). Under sixteen: N. Miller, Classics, and R. T. M. Haines, Science (Clifton). Under fifteen: F. W. Terrell, Mathematics (Missionary School, Blackheath); F. W. Ogilvie, Classics (Clifton). Under fourteen: H. I. M. Bebb, Classics (Mr. Radcliffe, East Grinstead); G. H. S. McNair, Mathematics (Messrs. Thomas and Tillard, Cargilfield, N.B.); M. Matthews, Mathematics and Modern Language (Clifton); R. S. Lindsay, Classics (Mr. Cauldwell, Boxgrove, Guildford); E. A. Parker, Classics (Mr. Pocock, Clifton); R. S. Partridge, Classics (Miss Lucas, Clifton); A. P. Franklin, Classics (Mr. Addison Chater, York Place, W.); A. D. Crow, Mathematics (Mr. Gregoire, Bath); D. G. A. Fox, Music (Clifton).

Dublin.—The Trinity College Fellowship has been won by Mr. G. R. Webb, with a total of 919 marks in Mathematics and in Ethics and Logics. The Madden Prize of £400, with a Fellowship prize of £60, was awarded to Mr. R. W. Tate, who made a total of 819 marks in Classics and in Ethics and Logic. A Fellowship prize of £20 was awarded to Mr. J. C. Wasson, who made a total of 379 marks in Mathematics.

Eltham College (the Royal Naval School).—The Gold Medal: P. C. Plowden, who has obtained an open scholarship at Balliol. The Classical Silver Medal: T. K. Battenburg. The Mathematical Silver Medal: M. C. Mathew.

Inter-Collegiate Scholarships Board (London).—The following scholarships and exhibitions have been awarded by the Board (subject in the case of the Skinners' Company and the Merchant Taylors' Company's exhibitions to the confirmation of the award by the Courts of those companies):—University of London, University College: to Andrews Scholarships, in Classics, R. B. Solomon, University College School; in Modern Languages and History, W. E. Collinson, Dulwich College School; and in Science, H. J. Page, Southend-on-Sea Technical School; to the West Scholarship in English Literature, H. Cooper, Bancroft's School. King's College (University of London): Clothworkers' Company's Exhibitions in Science, J. Legg, King's College, and H. Preston, King's College; Engineering Entrance Exhibitions, W. Allard, Clifton College, and W. Legg, Tiffin's Boys' School; Skinners' Company's Scholarship in Arts, Clara M. Knight, King's College, Women's Department; Merchant Taylors' Company's Scholarship in Science, Florence A. Mockeridge, Woolwich Polytechnic. East London College (University of London): Drapers' Company's Scholarships in Arts, P. B. Hacker, Aske's Hatcham Boys' School, Eva F. Kingham, Watford Grammar School, and Marjorie H. Goff, Grey Coat Hospital, Westminster; Drapers' Company's Scholarships in Science, J. J. Elliott, West Ham Technical Institute, A. L. Howells, Lydney Secondary School, C. W. Gilham, Lincoln Municipal Technical School, and E. J. Surman, Hampton Grammar School. The Drapers' Company have awarded two additional Science scholarships, tenable at the East London College, to S. G. Soal, of Southend-on-Sea Technical School, and F. L. Bassett, of Dulwich College.

Manchester.—Rogers Scholarship: W. Hanna, St. Bees' School; Cartwright Scholarship: J. Parlby, Manchester Pupil-Teachers' College; Dalton Scholarship: A. Warmisham, Manchester Municipal Secondary School; Hulme Scholarship: Hilda Livesey, Manchester High School for Girls; Jones Scholarship: divided between Barbara M. Garrard, Pendleton High School, and Theodora Pitt, Manchester High School for Girls; James Gaskill Scholarship: F. A. Jones, Newcastle High School, Staffordshire; Crace-Calvert Scholarship: no competition. Theodores Exhibition: H. Cardwell, Hulme Grammar School, Manchester.

Marlborough.—The following is the result of the scholarships examination:—Senior Classical: 1, A. L. Jenkins (honorary), Upper V.; 2, E. E. Meyrick, Upper V.; 3, G. T. L. Ellwood (honorary), Lower VI.; 4, E. A. Pam, Upper V.; 5, M. J. Vincent Jackson, Upper V. Junior Classical:—1, D. S. Branson (house scholar); 2, J. L. Bulmer; 3, J. B. Kirkpatrick; 4, A. Wedgwood, Lower V. 2; 5, D. J. St. C. Mullaly, Modern Middle 2 (mathematical); 6, J. M. S. Meston; 7, L. H. C. Hopkins; hon. mentioned: 1, L. A. Cattley; 2, L. Bainbridge-Bell. Senior Modern: G. H. E. Parr, Modern VI. Junior Modern: C. L. A. Gage-Brown, Modern VI. Senior Mathematical: D. H. Pinsent, Middle V. Authors: *aeq.*, K. G. Ireland, Engineering Class; C. J. A. Buckell, Upper V.

Merchant Taylors'.—Sir Thomas White Scholarships at St. John's College, Oxford: W. Haines, W. E. Hobday, and R. R. Baxter. Andrew Exhibition at St. John's College, Oxford: S. C. Hensler. Junior Fish Exhibition to St. John's College, Oxford: L. R. Lewis. Parkin Exhibition for best mathematician leaving for Cambridge: E. F. Bonhote. Richard Hilles Exhibition for Mathematics: L. A. Allen. School Tercentenary Scholarship: W. Haines.

Repton.—Entrance scholarships: H. P. C. Burton (Mr. C. C. Lynam, Oxford Preparatory School, Bardwell Road, Oxford); S. Rickard (the Rev. W. G. Price, Bowden House School, Harrow); G. L. A. Duff (Messrs. H. D. Thomas and H. C. Tilland, Cargilfield, Cramond Bridge, Midlothian); H. A. H. Gibbons (Mr. A. Harvey Trollope, Tyttenhanger Lodge, St. Albans); G. Bolton (Mr. G. L. Evans, Belmont School, Hove, Brighton). Foundation scholarships: J. E. Pedley, scholar, and C. P. Gillies, scholar, equal; hon. mentioned, M. Ogilvie, *minor*, scholar.

Rugby.—Entrance scholarships: B. A. James (Mr. G. Mason, Rottingdean School, Walrond Scholar); R. Jones-Bateman (Messrs. Chittenden and Longrigg, Streete Court, Westgate-on-Sea, Benn Scholar); B. W. Fagan, Rugby School; M. M. Sayer (the Rev. P. Crick, St. Ronan's, West Worthing); T. H. Marshall (Mr. Christopherson, Lockers Park, Hemel Hempstead); A. C. T. Lutyens (Messrs. Biddle and Barton, South Kensington Preparatory School); I. F. L. Elliot (Messrs. de Winton, Gore Court, Sittingbourne); P. H. B. Lyon (the Rev. E. Earle, Bilton Grange); A. E. Egerton (Mr. E. F. Johns, Winton House, Winchester); F. J. Bechmann, Peterborough Lodge School, Hampstead; P. W. Willans (the Rev. P. Crick, St. Ronan's, West Worthing).

St. Edward's School, Oxford.—Scholarships: J. S. N. Bernays (Stanmore Park), L. R. Tatham (Shirley House, Wat-

ford), N. B. Hudson (St. Edward's), C. H. Geake (The Hoe Preparatory School, Plymouth), A. H. Seymour (St. Edward's), J. B. Quested (St. Edward's), E. B. W. Malet (Tower House School, Dorking).

WESTMINSTER.—A. P. Waterfield has won the Royal Asiatic Society's Public School Medal for an essay on Warren Hastings—who was himself a Westminster boy.

FEDERAL CONFERENCE ON EDUCATION.

BOARD OF EDUCATION ANNOUNCEMENT.

IT is understood that a strong desire has existed that official Conferences on Education, consisting of representatives sent by the various Governments throughout His Majesty's Dominions, should be held at regular intervals, and that the first of such Conferences should be convened by the Imperial Government.

We are officially informed that an announcement was made on behalf of the Government to one of the Conferences of Education Representatives of various Colonial and Indian Governments and of the Home Government, held May 25 to June 1 by invitation of the League of the Empire at Caxton Hall, that His Majesty's Government considered it desirable to arrange for an Official Education Conference to be held in the year 1911. The Secretaries of State for the Colonies and for India are preparing to send out intimations to that effect.

OFFICIAL SUMMARY OF THE PROCEEDINGS.

The Conference was convened by the League of the Empire, and the meetings were held at the Caxton Hall, Westminster, from May 25 to June 1. The Conference consisted of representatives nominated for the purpose by the several Governments or Education Departments throughout the Empire, and held its meetings in private. Mr. S. H. Butcher, M.P., chairman of the Council of the League of the Empire, presided as chairman throughout, and Mrs. Ord Marshall, hon. secretary of the League of the Empire, attended as secretary. At three of the meetings Lord Tennyson, president of the League, was present by request of the Conference. The following summary of the proceedings was issued:—

The first meeting, on Saturday, May 25, was devoted to settling procedure at the official meetings, and to the selection of subjects for discussion by the full Conference and by committees respectively. It was decided that the larger subjects which it was desired to discuss should be taken in full Conference, and that certain subjects of a more special or technical nature should be discussed in three committees consisting respectively of those representatives in whose countries these subjects were of chief importance. It was decided to devote the morning meetings on each day to sessions in full Conference, and that the committees should meet in the afternoon, and, further, that resolutions should only be put when it was clear that the Conference was prepared for a unanimous decision.

The transactions at the morning meetings were as follows:—On Monday, May 27, the subjects of discussion were (*a*) "The Mutual Recognition of Teachers' Certificates," and (*b*) "The Interchange of Teachers and Inspectors." Under (*a*) the Conference was asked to consider "whether, in order to facilitate interchange of teachers, practical steps could now be taken to promote a larger degree of mutual recognition of the teachers' certificates issued by different educational bodies in various parts of the Empire; and whether, in the case of individual teachers, more might be done by the Education Departments concerned to sanction provisional recognition of one another's certificates for short specified terms, the renewal of such recognition to be contingent on favourable reports being received from inspectors who have observed the teacher's work." A full discussion took place, and, after a considerable interchange of information as to the manner in which certificates in the various countries were awarded and their value equated, the Conference came to the conclusion that the variety of local conditions, especially in regard to such matters as the tenure of teachers, their method of appointment, and promotion and similar points, made it impossible to arrive as yet at any complete system of mutual recognition of the teachers' certificates issued by different educational bodies in various parts of the Empire. As regards (*b*) the Conference was asked to consider "how far interchange of teachers and inspectors between different parts of the Empire would be feasible (i.) for a short visit, or (ii.) for a term of years." After discussion, it was resolved: "That the Conference considers it desirable that financial and administrative arrangements should be made for enabling teachers and inspectors of schools to acquire professional knowledge and experience in parts of His Majesty's dominions other than their own."

On Tuesday the subject of discussion was "The Possibility of Closer Uniformity of Curricula, Nomenclature, and Methods of presenting Official Educational Statistics." On the first part of this subject it was resolved: "That, in the opinion of this Conference, it is not desirable or necessary to take any steps to bring about uniformity of curricula or text-books for the different school systems of His Majesty's dominions." On the second part it appeared that, in view of the great variety of conditions prevailing, what was needed was not so much a greater degree of uniformity in presenting statistics as a clearer understanding of what is connoted by the terms used and the definitions employed, and it was resolved that: "It is desirable that the different Education Departments of His Majesty's dominions should define, year by year, with precision, the terms used in the regulations and statistics that they publish and the basis upon which their published statistics are prepared."

The next three sittings were devoted to a careful investigation into the various ways in which the interests of education in the different parts of the Empire could best be furthered by encouraging closer relations and a more effective and continuous exchange of information between the several Education Departments. It was felt that the actual meeting together in conference of persons engaged in the administration of education for the purpose of personal interchange of information and ideas was of the highest possible value; but that there were also great advantages to be derived from having a permanent machinery for collecting and disseminating year by year information on various subjects in regard to the condition, development, and progress of education in the different parts of the Empire. The following resolution was agreed to:—"That the delegates desire to express their appreciation of the value of this Conference to the work of the Education Departments throughout the Empire, and resolve: (i.) That a quadrennial Conference is desirable; (ii.) that the representatives sent to the Conference should be selected by the Governments; and (iii.) that it is desirable that the first of such Conferences should be convened by the Imperial Government." It was also resolved: "That the Conference is unanimously agreed as to the importance of a permanent central bureau of educational information."

A resolution was passed on Friday: "That this Conference places on record its high appreciation of the work done by the League of the Empire in stimulating educational activity and in collecting and circulating information on educational subjects."

Saturday morning's meeting was devoted to receiving reports of committees and resolutions from the open Conference. Cordial votes of thanks were passed to the League of the Empire, to the chairman, Mr. S. H. Butcher, M.P., and to Mrs. Ord Marshall, hon. secretary of the League. A presentation was made to Mrs. Ord Marshall in the form of a miniature set in diamonds.

Committees.

A summary is here added of the subjects discussed by the three committees (A, B, and C) of the official Conference:—

Committee A.—"Problems affecting parts of the Empire in which there are large English-speaking populations."—The relative value of professional training and practical experience in the education of the teacher: (i.) for primary schools; (ii.) for other schools. Rural education: (i.) the training of teachers for rural schools; (ii.) the provision of education in sparsely populated districts; (iii.) the modification of the curriculum for schools in rural areas; (iv.) (*a*) the relation of primary schools in rural areas to specific agricultural education of a higher type, (*b*) the provision of specific agricultural education for rural areas. Scholarships *v.* low fees in education other than elementary. Physical training: (i.) in elementary, (ii.) in other, schools; (iii.) What should be the differentiation in regard to the sexes? Manual training and training for the duties of the home.

Committee B.—"Problems affecting English-speaking populations in remote portions of the Empire." The subjects discussed by the Committee were as follows:—(*a*) the encouragement of higher education, (i.) by co-operation between neighbouring colonies; (ii.) by the establishment of scholarships tenable in larger centres within the Empire; (iii.) by the holding of examinations conducted by universities situated in other parts of the Empire. (*b*) Moral instruction. (*c*) Hygiene. (*d*) Co-education.

Committee C.—"The bi-lingual problem, both languages being European."

RESOLUTIONS AT OPEN MEETINGS.

The following are the principal resolutions passed by the Conference in so far as its deliberations were open or communicated to the press :—

At a meeting of the full Conference it was unanimously agreed :—"That it is desirable that the Colonial Office and the Board of Education should co-operate in issuing officially particulars as to the course of study, fees, expenses of living, &c., at colonial universities, technical colleges, and agricultural colleges, together with statements of the advantages attaching to their degrees and diplomas, and that information should be circulated in the colonies as to similar advantages and facilities which exist in this country."

In the Teaching of English Section the following resolutions were passed :—"That this Conference urges the importance of the study of the English language and literature as an essential part of school training on the grounds of practical utility, an enlightened patriotism, and the human ideal in education." "That in the teaching of living languages the direct system be used, with occasional explanations in the mother tongue of the pupil, when it is evident that the latter has not understood the teacher." "That the object of the teaching of English should be to develop in pupils the power of thought and expression, and the power of appreciating the content of great literary works, rather than to inculcate a knowledge of grammatical, philological, and literary detail." "That fairy tales, skilfully used, provide a valuable means of literary education for young children."

At an open meeting of the University Section the following resolution was carried *nem. con.* :—"That it is desirable that a committee representing universities should be formed to investigate the question whether it is possible to facilitate the exchange of information as to their courses and standards between the universities of the Empire, and to take action accordingly."

In the Museum Section the following five resolutions were passed :—"That the formation of school collections illustrative of science or art is a valuable aid to education." "That when school collections are made to illustrate natural history or other branches of knowledge arrangements for the exchange of such collections between various parts of the Empire will assist the objects for which the League is instituted." "That teachers and others should discourage the making of such collections as might tend to the extermination of rare plants or animals, and should assist in preserving such objects by fostering a knowledge and love of Nature." "That this Conference recognizes the value of arrangements for the circulation of museum objects, as organized at the Victoria and Albert Museum, South Kensington, and at the Dublin Museum of Science and Art, at Sheffield Museum, and elsewhere, and warmly advocates an extension and development of the system." "That this Conference recommends the organization of a permanent collection of objects specially interesting and useful to those engaged in educational work in connexion with one of the great museums in London. That such a collection should include typical school museums and the outlines of a local educational museum."

In the Nature Study Section it was resolved that : "As Nature study gives that wide knowledge of the world and its products which is required throughout life, it should be inculcated at all stages of sound general education, and this Section recommends its earnest encouragement in the home, in the school, and in the outside world. Furthermore, this Section trusts that the Education Authorities of the Empire will endeavour to extend and encourage knowledge self-gained from original observations, as a vitalizing factor in the progress to full intellectual efficiency. That, the supply of teachers acquainted with true methods of Nature study being the greatest present requirement, special efforts be made to provide facilities for the proper preparation for the work of students and teachers in training."

EXHIBITS.

Considerable interest was taken by the delegates in the exhibitions of the Museums and Nature Study Sections. The Museums Section had as its chairman Lieut.-Colonel G. T. Plunkett, Director of the Science and Art Museum, Dublin, who showed a list of circulating cases from that museum. It is considered desirable in Ireland to circulate many elementary examples showing various processes, as well as copies of fine examples of artistic workmanship, and also to circulate collections illustrating the natural sciences. The cases are arranged on a convenient principle, so that they can be readily packed and sent off by persons unskilled in such matters, and, altogether, this means of spreading knowledge by the aid of museums is worthy of high commendation. Another matter which has been carefully attended to in Dublin is the bringing of the guides to the notice of the public. The guides are sold for ½d., are readily purchased by visitors, and prove of great importance in enhancing the educational value of the collections. The Nature Study Section, of which Sir John Cockburn was chairman, had Mr. Wilfred Mark Webb as its hon. secretary. Under its auspices a series of exhibits was arranged with the view of showing the delegates what is being done in various schools in this country in relation to the study of Nature. These exhibits included notebooks illustrating school journeys, diaries, and books of continued observations. About a dozen schools in different parts of the country sent exhibits. Mr. T. R. Ablett, art director of the Royal Drawing Society, of which he was delegate, furnished a section containing a series of drawings illustrating the life history of the young artist, and calling attention to the wonderful observing powers and powers of description from memory of young people, which, if properly trained, would obviate the necessity for the destruction of living specimens for the purposes of study. Other collections included such things as drawings of an oak tree during the year, and the life history of a hyacinth and of a chestnut. A case containing specimens of feathers was sent from Eton College Museum, to show how modern museum methods may be adopted even in a school museum.

HIGHER EDUCATION OF THE WORKING MAN'S CHILD.

AN INDICTMENT OF ADMINISTRATIVE ACTION.

MR. MARSHALL JACKMAN, Past President of the National Union of Teachers and member of the Consultative Committee of the Board of Education, speaking at Plymouth on "The Higher Education of the Working Man's Child," said that, as a teacher in the people's schools for more than thirty years, he claimed to know something of the aims and aspirations of the workers. He had seen their struggles and marvelled at their sacrifices, and he had watched with pain the machinations of the enemies of the progress of the children of the masses. He had seen measure after measure adopted designed either to restrict the opportunities or to cripple the institutions for the higher education of the workers' children. He had watched with anger the mole-like methods of those conspirators against the interests of the workers' little ones. He had listened with impatience to the unctuous platitudes of the advantages of higher education, when he knew that at the same time, by almost the same people, steps were being taken to restrict those opportunities for higher education. He was there to expose those plots against the educational progress of the children of his fellow-workers. He admitted that this was a strong indictment, and he was prepared to prove the case up to the hilt.

Mr. Jackman went on to show how the working man's children had been used to secure public funds for their higher education, and how these funds, after they had been obtained, were gradually, by means of administration, handed over for the higher education of the children of the middle and upper classes. He instanced the Science and Art grants which at one time were restricted to the use of children whose parents were in receipt of less than £2 a week. Now every farthing had been handed over to subsidized secondary education. He showed how the education endowments left for the children of the working classes had, by the Charity Commissioners, and latterly by the Board of Education, been gradually diverted from their original use under the Endowed Schools Act of 1868, and now the children of the working classes were being fobbed off with a few scholarships paid out of the local rates. He quoted from a return of the Board of Education showing the number of scholarships that had been then created, and pointed out the meagreness of the quantity. The "whisky money," too, which originally had been allocated for technical education, was now almost entirely handed over for the subsidizing of secondary education. The Science and Art Scholarships, which had been utilized largely by the working classes, were shortly to disappear, and they were told by the Board of Education that this money also was to be devoted to subsidizing secondary education. Even the scholarships created by the Local Authorities were largely secured by the children of parents who could afford to give their children special coaching for scholarship examinations.

Mr. Jackman dealt very severely with the Consultative

Committee's report on the higher elementary schools, saying that this was another instance of the side-tracking of the education of the workers' children. He urged the working men of Plymouth and of the country to see that a stop was put to this filching away of their children's birthright. He called attention to the new bursary system for pupil-teachers, and said that he saw in this another means of preventing the working man's child from entering the teaching profession. He did not approve of the subsidizing of the teaching profession at all, but he strongly objected to the Board of Education so subsidizing entrants to the profession that the benefits to be secured were not placed within the reach of all.

CONFÉRENCES FRANÇAISES.

SOCIÉTÉ NATIONALE DES PROFESSEURS DE FRANÇAIS EN ANGLETERRE.

"ALCESTE ET PHILINTE."

Par LOUIS LATOUR.

LE 25 mai dernier, M. Latour nous a fait une conférence, disons plutôt une causerie, sur deux des personnages du "Misanthrope" de Molière—Alceste et Philinte. M. Minssen occupait le fauteuil présidentiel.

Le conférencier nous a, dès le début, averti qu'il n'entendait nullement traiter ces personnages au point de vue littéraire, mais bien au point de vue plus pratique, plus réel, plus vital, de la valeur de leur caractère dans le commerce du monde, car c'est bien là la question que semble s'être posée Molière, et qu'il a voulu résoudre, en écrivant cette pièce, dont l'intrigue, assez mince du reste, pourrait avoir pour titre "La Coquette démasquée." Il a voulu faire ressortir ce que l'on perd à être trop franc, trop entier dans notre milieu social, et ce que l'on gagne à ne pas toujours l'être assez, sinon à ne pas l'être du tout. "Si j'avais le mauvais goût ou l'impertinence," nous dit M. Latour, "de vous demander tout à l'heure ce que vous pensez de ma causerie, seriez-vous Alceste ou Philinte?" Voilà la question. Il faut, dans la vie, être Alceste ou Philinte: Alceste, c'est-à-dire l'homme qui dit franchement, brutalement ce qu'il pense; Philinte, l'homme du monde aimable qui sait accommoder la vérité, l'affubler de telle sorte qu'elle n'est plus reconnaissable. Lequel des deux reussit le mieux dans le monde, et lequel des deux est-il plus avantageux, sinon plus moral, d'imiter? Si nous en croyons Molière, la façon de faire d'Alceste amène immédiatement des conflits désastreux: affaire du sonnet, procès, etc. Dans la réalité, c'est bien pire! Il y a des vérités auxquelles on ne pardonne jamais, et tels amis d'enfance se sont brouillés à mort pour s'être dit trop brutalement ce qu'ils pensaient l'un de l'autre. O Cicéron, où est ton idéal! Les Anglais eux-mêmes, que le conférencier déclare beaucoup plus "Alcestes" que les Français, n'osent point, quoi qu'ils en aient, ne pas faire de compliments. Témoin les petites réunions mondaines où l'on applaudit sans vergogne ce que, dans son for intérieur, on qualifie d'exécrable. Et notre infatuation personnelle, qui ne nous permet que bien rarement de nous voir tels que nous sommes, nous rend affreusement crédules, et la flatterie, nous laissant tels que nous nous voyons, nous apparaît pure vérité. La sincérité brutale d'Alceste, dans les salons comme sur la scène, froissant tous les amours-propres, est jugée méchanceté et calomnie, ou tout au moins manque de savoir vivre et d'éducation, par celui à qui elle s'adresse. Alceste lui-même, s'il se voyait tel qu'il est, aurait l'esprit moins critique, serait plus porté à transiger. C'est toujours l'histoire de la paille dans l'œil du voisin. Qui peut juger autrui, alors qu'il ne peut se bien juger lui-même? Labiche a mis cette vérité en évidence dans une de ses spirituelles comédies, "Le Misanthrope et l'Auvergnat." Le misanthrope de Labiche, après avoir payé un porteur d'eau très cher pour lui dire toujours la vérité, se fatigue de se voir si moralement laid, et met son Auvergnat à la porte. Toutes ces réflexions nous amèneraient à opter pour Philinte, si un petit chef-d'œuvre, écrit par Courteline en 1905—"La Conversation d'Alceste"—ne nous faisait réfléchir au fait que l'on ne peut avoir qu'une confiance très limitée dans les Philintes. Lequel donc doit l'emporter dans nos préférences? "Ni l'un ni l'autre," conclut le conférencier, "mais un composé des deux. Le mieux serait d'être Alceste par le cœur et Philinte par les manières."

En remerciant le conférencier, M. Minssen fait remarquer qu'Alceste et Philinte sont tous deux dans la nature humaine, et sans exagération. Alceste n'est pas un vrai misanthrope, car il ne déteste que les travers des hommes et les exagérations des conventions sociales. Il parle toujours de fuir dans un désert,

> De chercher sur la terre un endroit écarté
> Où d'être homme d'honneur on ait la liberté;

mais on sent que Célimène saura toujours le retenir, et que toute sa coquetterie ne saurait le rebuter. Il aime, et c'est tout dire. Au contraire, Shakespeare met en scène un misanthrope véritable, et son Timon est réellement guéri de son amour pour la société par l'ingratitude de ses amis. On peut également opposer Alceste au personnage de Labiche, car Chiffonnet se plaint qu'on lui ment, à lui, et non qu'on mente en général. Il s'attache Mâchavoine pour n'entendre que la vérité, et il s'en débarrasse dès qu'il trouve la vérité plus gênante que la flatterie. Lui aussi croit haïr la flatterie alors qu'il n'en déteste que la forme. Quant à la médisance en Angleterre, fréquentons un peu les salons de Lady Teazle! Une dame, prenant la parole dans l'auditoire, a fait ressortir que, malgré qu'en eût le conférencier, on n'était pas sans savoir médire de son prochain dans la société anglaise, et que l'on n'y était point non plus tant ennemi de la flatterie qu'il voulait bien le faire croire; qu'à tout prendre, on savait bien dire aussi la vérité en France, mais qu'on savait la dire dans un langage qui en atténuait peut-être un peu la rudesse.

CORRESPONDENCE.

[*We do not hold ourselves responsible for the opinions expressed by our correspondents.*—ED. *E.T.*]

PROF. FINDLAY ON MORAL INSTRUCTION.

To the Editor of "The Educational Times."

SIR,—I hope to have an opportunity of replying, sooner or later, to Prof. Findlay's address on the above subject. Meanwhile, just one or two remarks. The series of short questions which I recently sent to your columns still remain unanswered by Prof. Findlay and Mr. Paton. An inquiry, too, has taken place; and I have noticed how indefinite and intangible—how purely of the nature of a prejudice or an "idol of the market-place"—are the objections to direct moral instruction.

I forget. There is Prof. Findlay's own address. Here we have at last the scientific basis of the objections! We must not introduce children "prematurely" to moral problems! How the guardian angels to whom Shoreditch and Limehouse are entrusted must weep (or smile) at this solicitude! "Premature"—as if *any* moral question could be discussed "prematurely" in those districts; as if every vice was not flourishing within ten yards of every doorstep! Prof. Findlay's fallacy is just this: he pictures an ideal condition of society, and then urges that in such a condition the deeper moral problems of life should be postponed till after adolescence. Excellent—though many of us have met children morally thoughtful long before the age of sixteen! But, like expouents of *another* kind of *laissez-faire*, Prof. Findlay is really dealing with an abstraction; with a society different from any that exists to-day. The choice, I would remind him, is not between a kind of premature direct moral instruction and his own proposals for indirect disciplinary methods. He forgets that direct *im*moral instruction is already established in the slums of our cities. The problem is: How are we to counteract this? There is no talk about "prematurity" in the ranks of Apollyon. When child study and Froebelianism become doctrinaire aud lose touch with life they are as daugerous as empiricism.

I am seeking for light on this subject, and, if Prof. Findlay or Mr. Paton can show where is the fallacy of the following sentence I shall be only too glad, even if I have to sever all connexion with that much abused organization the Moral Instruction League:—"Moral evil often springs from ignorance, thoughtlessness, prejudice, or delusion." Is this true or false? I still pause, expectant.—I am, Sir, &c., F. H. HAYWARD.

87 Benthal Road, Stoke Newington, N.,
June 5, 1907.

"CIRCULAR 555" ON LATIN PRONUNCIATION.

To the Editor of "The Educational Times."

SIR,—Will you allow me space to convey an explanation to those secondary-school teachers who, after my recent lectures at the College of Preceptors on Pronunciation, &c., showed me the Circular 555 of the Board of Education, ordaining a pronunciation of Latin apparently quite different from that which I had been teaching? I had not seen the Circular before, and wrote at once to the Board to ask for some closer details upon several points which seemed to me not quite clear.

I have since been officially informed that the Board do not enter into "nice phonetic points," and that the Circular 555 "represents the pronunciation *approximately only*."

Those who are conversant with the numbers of the Resonator Scale will therefore be able to interpret the Circular thus:—

ē (*mēta*)	more as	*e* (X., Res. Sc.)	than	*-are* (VIII.–VI.)	in	"mare,"
ī (*fīdo*)	„	*i* (XII., „)	„	*-eer* (XI.–VI.)	„	"peer,"
ō (*nōtus*)	„	*o* (II., „)	„	*o* (III.)	„	"roar."

The short *ĕ*, *ĭ*, and *ŏ* might be made more like the long *ē*, *ī*, and *ō* in quality, though shorter in quantity, without being so far removed from them as in the English sounds "fret," "fit," and "not." The same discretion may be exercised with *ŭ*; for the short form of *oo* (*ū*) is treated in the Circular as if it were the same in quality as the *u* in "full."

It is thus evident that the best Roman pronunciation of Italian vowels can be applied to Latin without departing more than a very little from the "approximate" directions of the Circular 555.

As regards the diphthongs *ae* and *oe*, and the consonants *c*, *g*, and *v*, I can find no possible means of reconciliation at present.—

I am, Sir, &c., W. A. AIKIN.

June 4, 1907.

MEETING OF THE COUNCIL OF THE COLLEGE OF PRECEPTORS.

A MEETING of the Council was held at the College, Bloomsbury Square, on June 15. Present: Mr. E. A. Butler, Vice-President, in the chair; Dr. Armitage Smith, Mr. Barlet, Rev. J. B. Blomfield, Rev. A. W. Boulden, Mr. Eve, Miss Jebb, Mr. Kelland, Miss Lawford, Rev. R. Lee, Rev. G. E. Mackie, Dr. Maples, Mr. Millar Inglis, Mr. Milne, Dr. Moody, Miss Punnett, Mr. Rule, Mr. Rushbrooke, Rev. Dr. Scott, and Mr. Starbuck.

The minutes of the last meeting were read and confirmed.

The Secretary reported that the number of entries for the forthcoming Certificate and Lower Forms Examinations was about 5,500.

He read a letter from the Rev. J. O. Bevan, one of the representatives of the College at the recent Federal Conference on Education, giving an account of the proceedings of the Conference.

He read a letter announcing the winding-up of the National Association for the Promotion of Technical and Secondary Education.

The Diploma of Associate was granted to Mr. T. A. Rogers, who had satisfied the prescribed conditions.

In response to an application on behalf of South African candidates, the Council decided that in December next a Third Class paper in Dutch should be set for the Certificate Examinations, in addition to the papers already set for the First and Second Classes.

Prof. J. Adams, M.A., B.Sc., F.C.P., was appointed to deliver the Autumn Course of Lectures to Teachers on the Practice of Education.

Delegates were appointed to represent the College at the Second International Congress on School Hygiene, to take place in London on the 5th to 10th of August.

Saturday, July 20, was fixed as the date of the next Ordinary General Meeting of the members of the College.

The Finance Committee presented two reports setting out the terms of tenancy from Michaelmas, 1907, of part of the College premises by the Joint Agency for Assistant Masters, and the conditions under which the Committee recommended the Council to undertake, with other bodies, to guarantee the Joint Agency Committee against financial loss on the working of the Agency.—Both reports were adopted.

The Examination Committee presented a Report, recommending:—

1. That the maximum number of subjects allowed to be taken by First Class candidates be reduced from thirteen to twelve.
2. That Parts I. and II. of the First and Second Class English papers be printed separately and given out at different times, that the time allowed for Part I. (Grammar, &c.) be 1½ hours, and for Part II. (Literature) 1 hour, that the two Parts count as one subject, and that all candidates should be required to pass in Part I.
3. That Part I. of the First Class Arithmetic paper should be of a simpler character than at present.
4. That in the syllabus of the Third Class Arithmetic, for "simple questions in Practice" there be substituted: "simple questions in calculations of values, to be worked by Practice or by other methods."
5. That a Second Class Paper be set in Botany.
6. That Drawing be allowed to count as one of the alternative obligatory subjects for each class of Certificate.
7. That the Rev. H. A. Soames's offer of a sum of money to found a Second Class Prize for Scripture History, to be called the Soames Prize, be accepted.

The Report was adopted.

The draft Report of the Council to the General Meeting was considered, and was referred to the President, Vice-Presidents, and Dean for final revision.

The following resolution was adopted:—"That the Council of the College of Preceptors protests against the proposed abolition of the 2d. limit of the rate for higher education, on the ground that it will tend to encourage extravagance, especially in buildings and in administrative expenditure, and will not necessarily tend to increase the efficiency of the teaching or secure the adequate remuneration of the teachers." The Council directed that copies of the resolution should be sent to the Prime Minister, the Chancellor of the Exchequer, the President of the Board of Education, and the Press Association.

The following persons were elected members of the College:—
Miss L. L. Smith, A.C.P., Craig House School, Stansted.
Mr. J. C. Thomas, B.Sc., L.C.P., Kingsholme, Weston-super-Mare.

The meeting was adjourned to July 20.

The following books had been presented to the Library since the last meeting of the Council:—

By the BOARD OF EDUCATION.—Continuation School Work in the Grand Duchy of Baden and in Canton Zurich; Modern Sides of Public Schools: (ii. Rugby).
By the NATIONAL UNION OF TEACHERS.—N.U.T. Report, 1907.
By the VOLTA BUREAU, WASHINGTON.—The Association Review, February-April, 1907; Seventh Annual Report of the Boston School for the Deaf, 1906.
By G. BELL & SONS.—Chaffey's Bell's First German Course; Pond's Kingsley's The Heroes; Rose's Elementary English Grammar through Composition.
By the CAMBRIDGE UNIVERSITY PRESS.—Davies' Demosthenes' Philippics; Pearson's Euripides' Heraclidae and Sophocles' Ajax; Kiddaway's Macaulay's History, chapters i.–iii.
By MACMILLAN & CO.—Barnard and Child's New Geometry for Middle Forms; Buller's Macaulay's Essay on Warren Hastings; Deakin's New Geometry Papers; Palmer's Arithmetic; Frazer's La Famille Troisel.
By METHUEN & CO.—Beard's Easy Exercises in Algebra.
By J. MURRAY.—Fletcher's Introductory History of England, 1485-1660.
By the OXFORD UNIVERSITY PRESS.—Hugon's Sand's Jeanne; Preston's Balzac's Le Colonel Chabert.
By RIVINGTONS.—Whitham's Readings in Old Testament History.
Calendar of the University of the Cape of Good Hope.

COLLEGE OF PRECEPTORS.

PRACTICAL EXAMINATION FOR CERTIFICATES OF ABILITY TO TEACH.

The following is a list of successful candidates at the Examination held in May, 1907:—

Class II.

Brown, J. S.	Evans, Miss J. L.
Charnock, Ewart.	Page, Miss L. E.

AT Oxford University the following candidates have been adjudged worthy of Distinction by the examiners for the Diploma in Economics:—Miss C. V. Butler, Woman Home Student; A. D. Dodgson, B.A. Christchurch; E. T. Foley, Pembroke; J. L. von Krosigk, Oriel; E. von der Lühe, Hertford; C. F. Roediger, Trinity; and B. Wilson, non-collegiate. The following have satisfied the examiners:—Prince A. Boncompagni-Ludovisi, Merton; N. Carothers, Pembroke; F. W. M. H. von Frantzius, Christ Church; and J. Harvey, St. John's.

Mr. MURRAY'S RECENT BOOKS

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From the Earliest Times till the year 1832. With Maps, Plans, and Index. Part II.—**From Henry VII. to the Restoration.** 5s.

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Murray's School Arithmetic.

By A. J. PRESSLAND, M.A., Edinburgh Academy. Large crown 8vo, 2s. With Answers, 2s. 6d.

Supplementary Exercises for Home work, with Notes on Method. 6d.

A new Arithmetic designed to meet the present-day practical requirements of pupils between the ages of eleven and seventeen in Secondary Schools. It contains a very large number of examples—all original—and some new features which will be of interest to all who teach the subject on modern lines.

The book of **Supplementary Exercises,** though primarily intended for use with this volume, will be found to fit in with any modern text-book on Arithmetic.

Le Français Parlé et Écrit.

Livre des Commençants. By A. STALLWORTHY, M.A., Royal Grammar School, Newcastle-on-Tyne. 3s. 6d.

The present book is not a replica of the many "First Books" that have recently appeared. It is an attempt to combine, for the initial stage of the teaching of French, the distinctive aims of the newer and the older methods. Dealing in gradual succession with the whole of the elements of French speech, it places grammar and grammatical accuracy in the foreground of its plan; at the same time its methods are entirely based on oral teaching.

The Growth of English.

An Elementary Account of the Present Form of our Language and its Development. By HENRY CECIL WYLD, Baines Professor of English Language and Philology in the University of Liverpool.

This book is intended for students in Secondary Schools and Training Colleges. It attempts in the first place to lay before the reader the main facts connected with the spoken English of the present day, its sounds, vocabulary, and accidence; and secondly proceeds to inquire how these arose out of earlier forms.

Murray's English Literature Series.

A COURSE FOR SCHOOLS AND COLLEGES.

By E. W. EDMUNDS, M.A., B.Sc. (Lond.),
Luton Secondary School; and
FRANK SPOONER, B.A. (Lond.),
Director of Education for Bedfordshire.

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CURRENT EVENTS.

Fixtures.

The Half-yearly General Meeting of the members of the College of Preceptors will take place on Saturday, July 20.

* * *

The Certificate Examination will begin this year on December 2.

* * *

The King and Queen propose to visit Bangor on July 9, to lay the foundation stone of the new buildings of the University College of North Wales.

* * *

The London Board for the Extension of University Teaching is arranging a Holiday Course for Foreigners, to be held in London from July 22 to August 16, under the direction of Prof. Rippmann.

* * *

Vacation Courses in English, French, and German will be held in Edinburgh University August 1–30.

* * *

Vacation Courses for foreign students will be held at the University of Dijon, July 1 to August 31. Apply to the Secretary, M. Lambert, 10 rue Berbisey. The Comité Dijonnais de Patronage des Etudiants Etrangers issues an "Opuscule à l'usage des Etrangers" (Dijon: Venot, 1 Place d'Armes).

* * *

The British University Students' Congress will be held this year at the University of Liverpool on July 10 and 11.

* * *

The British Association will meet at Leicester on July 31, Sir David Gill, K.C.B., President. In the Educational Science Section (L) Sir Philip Magnus, B.Sc., M.P., will be President, Prof. Sadler and Mr. W. M. Heller, B.Sc., being Vice-Presidents, and Prof. R. A. Gregory Recorder.

* * *

The autumn Council and General Meetings of the Assistant Masters' Association will be held at King Edward's High School, Birmingham, on September 13 and 14.

* * *

The Royal Sanitary Institute holds examinations for the Certificate in Hygiene in its bearing on School Life at Birmingham on July 5 and 6, and at Cardiff on July 12 and 13.

* * *

The inaugural address of the President of the International Congress on School Hygiene (Sir Lauder Brunton) will be delivered on August 5. The Set Subjects for general discussion will be: "Methods for the first and subsequent Medical Examinations of School Children" (August 6); "School Work in its relation to (1) the duration of the lessons, (2) the sequence of the subjects, (3) the season of the year" (August 7); "The School and its relation to Tuberculosis" (August 8); and "The Lighting and Ventila-

tion of Class-rooms" (August 9)—each to be opened by three selected speakers, in English, French, and German, at 12 noon. The evening lectures (8 p.m.) will be: on "The Effect of School Training on Mental Discipline and Control in Adolescence," by Dean Welldon (August 6); on "Hygiène du Sport pour les Femmes et Filles," par Mons. le Dr. Doleres, des Hôpitaux de Paris, Membre de l'Académie de Médecine (August 8); on "Relations between Medicine and Pedagogics," by Prof. Dr. Med. u. Phil. Griesbach, Vorsitzander des Allgemeinen Deutschen Vereins für Schulgesundheitspflege, Mülhausen (August 9). Offices: 72 Margaret Street, W.

* * *

THE Horticultural College, Swanley, Kent, has issued the syllabus of the Natural History Course commencing next September.

Honours.

SIR E. MAUNDE THOMPSON, K.C.B., has been elected President of the British Academy, in succession to Lord Reay. Four new Fellows have been elected—Dr. Henry Bradley, Mr. H. A. L. Fisher, Prof. J. P. Postgate, and Prof. J. Cook Wilson. Ten Corresponding Fellows have been elected, including Prof. Gildersleeve, Mr. Justice Holmes, and Prof. William James—the first American scholars to be associated.

* * *

THE University of Oxford has conferred the following honorary degrees:—

D.C.L.: Prince Arthur of Connaught, the American Ambassador (Hon. Whitelaw Reid), T. H. Warren, M.A. (Vice-Chancellor, President of Magdalen College), Baron Loreburn (Lord Chancellor), Sir Henry Campbell-Bannerman, the Earl of Jersey, Lord George Hamilton, the Speaker (House of Commons), Sir Edward Grey, Baron Alverstone (Lord Chief Justice), Baron Sanderson, Sir Antony Macdonnell, Vice-Admiral Lord Charles Beresford, Field-Marshal Sir Evelyn Wood, Sir John Strachey, H. M. Butler, D.D. (Master of Trinity), E. Warre, D.D., C.B., M.V.O. (late Head Master of Eton), A. V. Dicey, M.A., B.C.L. (Vinerian Professor of English Law), Auguste Rodin (President of the International Society of Painters, Sculptors, and Engravers), G. F. Bodley, R.A., H. von Herkomer, M.A., C.V.O., R.A., Rev. W. Booth (General and Commander-in-Chief of the Salvation Army).

D.Sc.: Sir Norman Lockyer, Sir Richard Powell, Sir William Ramsay (University College, London), Sir William Perkin, F.R.S., Prof. W. Watson Cheyne, Ludwig Mond., Geheimrat Prof. Dr. Paul Ehrlich (Director of the Royal Institute for Experimental Therapeutics, Frankfort-on-the-Main).

D.Litt.: Archbishop of Armagh, Canon Scott Holland, Rev. Prof. Sayce, Mr. Sidney Colvin, Dr. Sidney Lee, Mr. S. Clemens ("Mark Twain"), Mr. Rudyard Kipling.

D.Mus.: Mons. C. C. Saint-Saens and Mons. Glazounow.

* * *

THE University of Cambridge has conferred the honorary degree of LL.D. upon Nicholas Murray Butler, Ph.D., President of the University of Columbia, New York, and Professor of Philosophy and of Education in the same University.

* * *

THE University of Dublin has conferred the honorary degree of LL.D. upon Lord Strathcona, Chancellor of Aberdeen University; Litt.D. upon Dr. M. R. James, Provost of King's College, Cambridge, and Prof. J. P. Postgate; D.D. upon Prof. Burkitt; and M.D. upon Dr. Conolly Norman and Dr. Pye-Smith.

* * *

DURHAM UNIVERSITY has conferred the following honorary degrees:—

D.Litt.: Prof. Tyrrell, Dublin; Mr. Rudyard Kipling.

D.C.L.: Earl Percy; Mr. Stuart J. Reid; Alderman Thomas Richardson (Newcastle); Mr. Thomas Lea, editor of the *Musical News*.

D.D.: Rev. J. D. Clarke, Durham University College, and late Fellow of the University.

M.A.: Mr. Horsfall, founder of St. Chad's College, Durham.

THE University of Toronto has conferred the honorary degree of LL.D. upon Mr. Bryce, the British Ambassador at Washington; and the honorary degree of D.Mus. on Lieut. J. Mackenzie Rogan, Bandmaster of the Coldstream Guards.

* * *

THE University of Chicago has conferred the honorary degree of LL.D. upon Mr. Bryce.

* * *

THE King has granted to Prof. Sir William Ramsay authority to accept and wear the insignia of Commander of the Order of the Crown of Italy, conferred upon him by the King of Italy in recognition of valuable services rendered by him.

* * *

PROF. ROBERTS BEAUMONT, M.Sc., head of the Textile Industries Department, Leeds, has been awarded the City and Guilds of London Institute's silver medal in recognition of his long services as Examiner in Textiles and otherwise in connexion with their educational work.

* * *

A TABLET in the Examination Schools at Oxford commemorating the foundation of the Rhodes Scholarships by the late Rt. Hon. Cecil Rhodes, M.A., D.C.L., was unveiled by Lord Rosebery (June 12).

* * *

A WINDOW of stained glass is to be placed in the Bute Hall, University of Glasgow, in memory of the late Principal Story.

Endowments and Benefactions.

LONDON UNIVERSITY has received £650 from Mrs. Creighton and the Committee formed to found a Lectureship in History in memory of the late Bishop of London. An annual "Creighton Lecture" on some historical subject will be given; and the remainder of the interest will be accumulated with a view to the establishment of a lectureship or a professorship.

* * *

IT is proposed at Cambridge to establish a fund for the promotion of research and instruction in the History of Law, Legal Language, and Legal Institutions, in memory of the late Prof. F. W. Maitland. If practicable, it is hoped to place a personal memorial in the Squire Law Library. It is suggested that the balance of the fund be offered to the University in trust to carry out the objects of the fund by encouraging research, publication of works, and arranging lectures. The movement is in the hands of Dr. Higgins, of Downing, and Mr. R. V. Laurence, of Trinity.

* * *

THE Trustees of the Geologists' Association have transferred to the University of London the Library of the Association now at University College on condition that it form part of the Library of University College.

* * *

GIRTON COLLEGE still wants £13,000 to clear off the debt on the new buildings. Only some £700 has been received, and a donor is waiting to give another £500 when the £700 is raised to £4,500. Particulars from Miss M. Clover, 16 Devonshire Terrace, W. Contributions to Miss E. M. Allen, Girton College, or to the Girton College Account at Barclay & Co.'s Bank, Cambridge.

* * *

MR. ALDERMAN EARP has given a site (£5,000) for, and £5,000 towards the erection of, new buildings for the Newark Grammar School.

* * *

THE Town Council of Aberdeen has agreed to give £15,000 towards the erection and equipment of a Technical College in the city.

The late M. Commercy has left £160,000 to the University of Paris for scholarships for scientific research.

* * *

Mrs. Thaw (mother of Mr. Harry Thaw) has given £10,000 to the Westminster Presbyterian University of Denver, with a contingent promise of four times as much more.

* * *

The University of Illinois has received £50,000 from the Chicago Syndicate of Packers for the promotion of the study of "food problems." The tests concerning the purity of the products turned out by the Trust, while under the control of the University, will be conducted by representatives from Harvard, Yale, Michigan, Cornell, and other Universities.

Scholarships and Prizes.

At Cambridge scholarships and exhibitions will be offered at Corpus Christi College in Mathematics, Classics, and Natural Sciences (January 1, 1908); at Queens' in the same subjects and in Hebrew (January 7); at St. Catharine's in Mathematics, Classics, History, and Theology (January 8); at Downing in Mathematics, Classics, History, Natural Sciences, and Law (March 4); at Magdalene in Mathematics and Classics (March 17); and at Selwyn in Mathematics, Classics, and Natural Sciences (March 17).

* * *

At Oxford scholarships and exhibitions will be offered in Classics at Balliol, Queen's, St. John's, Hertford, and Keble (December 3), at University, Exeter, Oriel, Brasenose, Christ Church, Trinity, and Wadham (December 10), and at Merton, Lincoln, and Worcester (December 16); in Mathematics at Balliol, Queen's, Corpus Christi, Merton, Exeter, New, and Hertford (December 3); in Natural Science at Balliol, Christ Church, Trinity, Queen's, and Hertford (December 3); in History at Balliol, New, Queen's, St. John's, Hertford, and Keble (December 3), at Trinity (December 10), and at Merton and Brasenose (January 11, 1908).

* * *

Trinity College, Oxford, offers four scholarships, £80 a year, and (without age limit) two or more exhibitions, one not less than £60 (December 10).

* * *

A Geographical scholarship, £60, will be offered at Oxford (October 10). Candidates must have taken Honours in one of the Final Schools. Apply to the Reader in Geography, Old Ashmolean Building, Oxford, by October 1.

* * *

Jesus College, Cambridge, offers one or more Lady Kay Scholarships, not over £60 a year, in July. No competitive examination. A Lady Kay Scholar of exceptional merit may receive an exhibition not exceeding £40 a year. Candidates must have taken a First or Second Class in some Tripos in 1906 or 1907. Scholars must study theology. Testimonials to the Rev. the Master, by July 17.

Appointments and Vacancies.

The Rev. E. S. Roberts, M.A., Master of Gonville and Caius College, has been re-elected Vice-Chancellor of the University of Cambridge for the academic year 1907–8.

* * *

Sir William Collins, M.P., has been elected Vice-Chancellor of the University of London for 1907–8.

Mr. James Leigh Strachan-Davidson, M.A., LL.D., Fellow, Jowett Fellow, Classical Tutor, and Senior Dean, has been elected Master, of Balliol College, Oxford, in succession to Dr. Edward Caird.

* * *

The new Taylorian Professorship of German Language and Literature will probably be filled up this month.

* * *

Mr. Thomas Barlow Wood, M.A. of Gonville and Caius College, Cambridge, University Reader in Agriculture, has been appointed to the Drapers' Professorship of Agriculture, Cambridge.

* * *

The Professorship of Zoology and Anatomy in the University of Cambridge is vacant through the death of Prof. Newton at the age of 78.

* * *

Prof. James Robertson, D.D. Aberd. and St. Andr., has retired from the Chair of Hebrew and Semitic Languages in Glasgow University, after 30 years' service.

* * *

Principal Iverach, D.D., has been transferred from the Chair of Apologetics and Systematic Theology to the Chair of New Testament Exegesis in the United Free Church College, Aberdeen. He is succeeded in the Chair of Apologetics and Systematic Theology by the Rev. David S. Cairns, M.A., Ayton.

* * *

In Manchester University Mr. F. T. Swanwick, M.A., Richardson Lecturer in Mathematics, has been appointed Fielding Lecturer in Mathematics, and has been succeeded by Mr. J. E. Littlewood, B.A. Cantab.; and Mr. H. M. Priestley, B.A. Cantab., has been appointed Assistant Lecturer in Mathematics.

* * *

A Professor of Mining is to be appointed forthwith in University College, Cardiff.

* * *

The Rev. C. A. B. Brockwell, M.A. Oxon., Professor of Divinity, King's College, Windsor, N.S., has been appointed Lecturer in Semitic Literature in McGill University, Montreal.

* * *

Mr. R. F. Young, Assistant Lecturer in History, Leeds University, has been appointed an Inspector under the Board of Education.

* * *

Mr. William Boyd, M.A., B.Sc., Head Master of Colston Public School, Maryhill, has been appointed Lecturer on Education in Glasgow University, in succession to Mr. John Clark, now Clerk to Glasgow School Board.

* * *

The Rev. Bruce McEwen, B.D., D.Phil., University Assistant in Divinity, has been appointed University Lecturer in Apologetics, Edinburgh University.

* * *

Mr. Andrew Watt, M.A., F.R.S.E., Assistant Secretary to the Scottish Meteorology Society, has been promoted Secretary, in succession to the late Dr. Buchan.

* * *

The Secretaryship of the Sheffield Education Committee is vacant by the death of Mr. John F. Moss. Mr. Moss was Clerk to the first Sheffield School Board.

* * *

A Principal—British graduate, with Honours in Arts—is wanted for Bareilly College (India). Rs600, rising to Rs800 (say £480–£640 a year). Apply to the President by August 1.

An Assistant Lecturer in Mathematics is required at University College, Bristol.

* * *

Mr. D. L. Chapman, B.A. Oxon., Demonstrator in Prof. Dixon's Laboratory, University of Manchester, has been appointed Assistant Tutor in Natural Science (with a Fellowship) at Jesus College, Oxford.

* * *

The Rev. R. C. Abbott, M.A. Cantab., assistant master and chaplain, Marlborough College, has been appointed Principal of the Theological College, Salisbury.

* * *

The Rev. H. B. Cartwright, M.A. Oxon., Lecturer, has been appointed Sub-Warden, at St. Augustine's, Canterbury, in succession to the Rev. R. J. E. Boggis, B.D.

* * *

Mr. J. Stephenson, B.Sc., Assistant Lecturer in Physics, University College, Cardiff, has been appointed assistant to the Earl of Berkeley in his physical researches.

* * *

The following Head Masterships are vacant:—Bentham Grammar School, Bewdley Grammar School, Dorchester (Dorset) Grammar School, Sedbergh School; St. Clement Danes (Holborn Estate) Grammar School; Mirfield; Kelly College, Tavistock.

* * *

Miss Hilda Oakeley, M.A. McGill, First Class *Lit. Hum.* Oxon., tutor for women students in Manchester University and Warden of the Hall of Residence, has been appointed Vice-Principal of the Women's Department in King's College, London. Miss Oakeley was formerly Warden of the Royal Victoria College, McGill University.

* * *

Miss Etheldreda Carless has been appointed Head Mistress of the Stafford New High School, to be opened in September.

* * *

Mr. James Nicholls Worman, B.A. Lond., assistant master, King Edward VII. Grammar School, King's Lynn, has been appointed Head Master of Donington Grammar School, which is to be reopened in September.

* * *

Mr. C. Darling, B.A. Lond., Head Master of Mirfield Grammar School, has been appointed Head Master of the new West Leeds High School.

* * *

The Rev. Henry Woolsey, M.A. Dub., has been appointed Head Master of St. Oswald's College, Ellesmere (Salop).

* * *

The Rev. A. D. H. Allan, M.A. Oxon., assistant and house master, Reading School, has been appointed Head Master of Wimborne Grammar School.

* * *

Mr. William H. C. Jemmett, M.A. Cantab., senior chemistry master, Owen's School, E.C., has been appointed Head Master of Lady Manners's School, Bakewell.

* * *

Mr. Robert Luscombe, B.A. Lond., assistant master, Hele's School, Exeter, has been appointed Head Master of the Municipal School, Banbury.

* * *

Mr. James A. Shawyer, B.A. Oxon., assistant master, Clifton College, has been appointed Head Master of Skipton Grammar School.

Mr. Douglas Knoop, B.A. Man., Gartside Scholar, has been appointed to the Labour Department of the Board of Trade.

* * *

A Registrar and Director of Women's Studies in the Day and Evening Classes is required at the South-Western Polytechnic, Manresa Road, Chelsea, W. £250.

* * *

A Teacher of English and Classics for Matriculation Students (Day and Evening) and general elementary classes is required at Birkbeck College. £250.

* * *

Mr. G. C. Bartindale, B.A. Oxon., has been appointed senior mathematical master at Wakefield Grammar School.

* * *

At the Woolwich Polytechnic Miss M. O. Saltmarsh, Girton College, Mathematical and Natural Science Triposes (Cambridge), has been appointed science mistress, and Miss F. M. Sturton, Newnham College, Moral Science Tripos (Cambridge), an assistant mistress, in the Secondary School; Mr. T. B. Vinycomb, M.A. Cantab., Junior Fellow in Experimental Physics R.U.I., Chief Assistant in the Physics Department; and Miss J. Robertson, Edinburgh School of Domestic Sciences, an assistant instructress in the School of Domestic Economy.

* * *

Mr. J. Calcraft, B.Sc. Lond., science master, Basingstoke Grammar School, has been appointed science master at Market Bosworth Grammar School.

* * *

Miss J. E. Dodd, B.Litt. Dunelm., Oaklands, Oxton, Cheshire, has been appointed French mistress at Balshaw's Grammar School, Leyland.

* * *

Mr. D. H. Ogley, B.Eng. Liv., has been appointed Assistant Lecturer in Electrical Engineering at the Royal Salford Technical Institute.

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The *A.M.A.* records the following transfers of assistant masters:—Mr. H. N. Adair, Colet Court, Hammersmith, to Strand School, King's College, W.C.; Mr. H. F. Beeton, Grammar School, Tottenham, to Loretto School; Mr. C. H. Bennett, Christ's Hospital, to Grammar School, Great Yarmouth; Mr. G. E. Cope, St. Bees School, to St. Lawrence College, St. Lawrence-on-Sea; Mr. W. G. Evans, Modern School, Leeds, to Grammar School, Barnet; Mr. W. G. Gledhill, Grammar School, Great Yarmouth, to Woodbridge School; Mr. P. B. Ingham, to Merchant Taylors' School, E.C.; Mr. W. M. Lewis, Intermediate School, Bootle, to Grammar School, Bury St. Edmunds; Mr. F. C. Moore, Huish Grammar School, Taunton, to Whitgift Middle School, Croydon; Mr. E. D. S. Pean, Grammar School, Burford, to Taunton School; Mr. W. R. Ramshaw, Russell Hill School, Purley, to Lawrence Schools, Murree, Punjaub; Mr. C. H. Brown, to Haileybury College; Mr. R. E. Davies, to the Technical School, Nottingham; Mr. F. Gondre, Grammar School, Bristol, to King Edward's School, Camp Hill, Birmingham; Mr. E. J. B. Ross-Barker, to Reading School; Mr. T. B. W. Spencer, Willaston School, Nantwich, to Clifton College.

General. It is reported that "plans are materializing in China for the establishment by the year 1910 of a great modern university at Pekin." The institution "will be modelled on the most approved European lines, and will have eight Faculties—Theology, Law, History and Literature, Medicine, Natural Science.

Industry, Agriculture, and Commercial Science." In the higher colleges of the Empire English is to be compulsory; and German is recommended to scientific students.

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THE representation of the "Antigone" of Sophocles at Bradfield College proved a great success, and the arrangements made for the visitors were most satisfactory.

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"FROM an exhaustive study of statistics in regard to graduates at nine of our oldest colleges for men and four for women," says President Stanley Hall, of Clark University, "it appears that ten years after graduation about one-fourth of the men and one-half of the women remain unmarried."

MORAL TRAINING.

PRESIDENTIAL ADDRESS TO THE TEACHERS' GUILD.

By J. LEWIS PATON, M.A.

MR. J. LEWIS PATON, the High Master of Manchester Grammar School, as President of the Teachers' Guild of Great Britain and Ireland, delivered his inaugural address on June 15 to a keenly interested audience. Taking for his subject the question of "Moral Training," he spoke as follows:—

IMPORTANCE OF THE INQUIRY.

Of all the inquiries to which Prof. Sadler has set his hand there is none larger, and at the same time more delicate, than this which he has now undertaken on moral training, none which, if successful, will compare with it in far-reaching results for all education, whether in these islands or elsewhere, whether in our own time or in time to come. There is no quest so hard as that in search of the philosopher's stone which will act on character, and it behoves us teachers to give to the trusty Galahad who undertakes it the best fruit of our experience and our thought to help him in his quest. If it behoves one class of teachers more than another, it behoves us of the Teachers' Guild, for, while other associations of teachers have as their first *raison d'être* the safeguarding of their several sectional interests, with us on our broader all-including basis, whether we belong to the primary school or the secondary, to private or public institutions, to the kindergarten or the university, the one factor which is common to all our work, the one question which is of common interest to us all, is this problem, on which Prof. Sadler is engaged: "How does the child become good?" Because the question is so large it is impossible to do anything more than touch the fringe of it. If Herbart is right when he says that the whole of education is summed up in the concept "morality," it is as wide as education itself, and the word "education" is, next to the word "life," the largest word in our vocabulary.

THE COMPARATIVE ETHICAL VALUE OF SCHOOL STUDIES.

The first question that Prof. Sadler suggests to us is the comparative ethical value of school studies, and at once, when we set ourselves to answer the question, we find how intensely individual is the question which he raises. "For myself," I should have to answer: "the ethical content of a classical curriculum is more valuable than that of science or mathematics, and that of the German literature is more valuable than that of the French." But, if I am quite clear as to myself, I am quite hesitant about applying this personal decision of my own to any other given person. I find that a boy who is working willingly and successfully at a scientific curriculum is in a healthier moral state than the boy who is working unwillingly and without success at classics. In short, the answer to the question varies with each individual boy: it depends upon his attitude and aptitude. What we want for a healthy moral state is that the boy should have joy in his work, the feeling of accomplishment, and an open-eyed sense of growth. And I suppose it is for that reason that we do not find in any given school, where the conditions are the same for all, that boys trained on the modern side are, as such, inferior in their standard of conduct or less responsive to the higher motive.

At once, therefore, we see how impossible it is in this matter to lay down any general canons, even on matters which we have had continuously under observation. The bearings of anything we may say lie in the application thereof.

Another point suggests itself with regard to curriculum. There is a school of thought which holds that the pre-eminently ethical subjects of our curriculum are English literature, history, and geography. I do not for one moment deny the ethical value of these studies; that ethical value with really efficient teaching might tell for much more than it does. But I am not going to have it thought for this reason that the value of classics and mathematics is merely intellectual or the least whit inferior in ethical result to the best literature and history teaching which our schools can show. The literary studies can no more dispense with the disciplinary than the woof can dispense with the warp. The very fact that the boy has to wrestle with hardness in these disciplinary subjects creates the tonic strenuous atmosphere in which moral fibre is tested and grows; and it is the toughness of these warp studies (if I may so name them) which gives consistency to the moral ideas suggested by literary and historic subjects, and makes them serviceable for conduct.

"THE SCHOOL OF HARDNESS."

The fact is that these disciplinary subjects, which seem to be hardly as much as named in the moral training inquiry, are the field for what is by far the most effective method of moral training—that is, regular practice in hard and honest work. Let me explain. When I was a boy at school there was a mathematical master of the skimble-skamble type. He exacted home lessons, as other masters did, but the regular way of doing sums for him was, first, to put down at the beginning the example given and work a few lines forwards from that; next, to look up the answer, put that down at a respectful distance, and work a few lines upwards; then, finally, to effect a skilful junction of these two top and tail pieces in the middle. This sort of thing passed muster and carried marks with a slack master. By the positive immorality of that proceeding one may gauge the positive moral value of a keen-eyed master who sees that the work he sets is honestly tackled. The boy who shows up a set of algebra examples honestly worked has had not only to exert his mind: he has had to exert his will power, too; he has had to set his face like a flint against his inborn *vis inertiae*, against the temptation from within to fake his sums, and possibly also against the temptation to seek illegitimate help from without. The class probably goes through without a single word being said about honesty or repelling temptation: the better the class and the better the master the less will be said. But we have what is better than the word: we have the thing itself—truth in the inward parts with the practice of truth; and it is by practice, not by precept, that we become perfect. Literature, history, and geography afford no such scope for moral practice, because they are "soft options" compared with Latin or algebra or geometry: it is in the school of hardness that we grow moral fibre that is robust.*

The same may be said of the games. It is the very hardness of the games that makes them the place where inward fights are won more important than the battle of Waterloo. May I take an instance? Mr. Gould's first lesson in his book of "Moral Instruction" is on self-control. He tells the story of the taming of Bucephalus, and draws most skilfully the appropriate moral: the pill with Mr. Gould tastes almost as nice as the jam. But suppose you brought me a boy lacking in self-control and asked me how he was to learn self-control—I should not dream of suggesting Mr. Gould's book. I should say: Let him play football with the other boys, and see that he plays hard. When he has, with the ball in his hands, broken through the opposing backs, receiving in the process a whack on the head and a kick on the shin, and then, after triumphantly crossing the line, and touching down the ball between the enemy's goal-posts, is recalled by the referee's whistle and his try is disallowed, because the referee thought he had run on to the touch-line—that not being the case—then, I say, if the boy bears all that without mentioning any towns in Holland, but smiles genially at the referee and the full-back who hacked him, and starts off again to play up and play the game as hard as ever—then, I say, however ignorant that boy may be of Bucephalus, he has learned *in practice* the lesson of self-control; and I don't see myself how he could learn it better.

"SCHOOL VIRTUES."

It would be easy to develop this point, but it is not necessary. I will content myself with pointing out that many qualities which

* "I most earnestly believe that the fault of the present time is, on the whole, distraction, and that one great cause of this distraction is the notion of a general duty to do good as something other than and apart from doing one's work well and intelligently."—Prof. Bosanquet, "Civilization of Christendom," page 182.

we teachers are constantly inculcating, such as punctuality, accuracy, neatness—qualities which I have sometimes seen slightingly referred to as "school virtues," are in reality great life virtues exemplified and enforced in small matters. Neatness is really in essence a form of respect for work, for duty, and the person to whom the duty is discharged; it is an expression of that virtue which is never acquired if not acquired in childhood—viz., reverence. Accuracy is our duty to truth in small matters. Punctuality is one of the ways we show our thought for other people: unpunctuality is a form of selfishness, and, though we may not agree with the new theology in saying that all sin is selfishness, we shall be all of us ready to agree that all selfishness is sin. Now all these things sound very small and insignificant and commonplace by the side of Bucephalus and the great deeds which resound through history, but they are none the worse for that: they are all the better. The spirit we want to get is the spirit which knows that the opportunities for doing great things are few and far between, but that the opportunities for doing good deeds lie thick strewn upon the beaten track of our daily lives, and that those men and women are the salt of the world who fulfil the small commonplace duties, charities, loyalties, and helpfulnesses of everyday life in the highest spirit. I was not surprised, in talking with one of Miss Pipe's old pupils, to find that one thing which stood out in her memory after so many years was what Miss Pipe said when she found one of the girls had laid down a wet piece of soap on a polished mahogany table: "That momentary act of reckless habit meant an hour of hard work for somebody; no real lady would be guilty of such thoughtlessness."

The Practice of Virtue.

The first thing which we commend to the Moral Training Inquiry is the study of moral practice, and, if the high-falutin' sophist of Elis was much disgusted with plain old Socrates because, when he had initiated an æsthetic discussion on the Sublime and Beautiful, Socrates at once reduced it to a question of pots and pans, boots and shoes, and similar mundane realities, we hope the great ones who form the Executive Council will forgive us for reducing the question of virtue-teaching so soon to a matter of unæsthetic footballs, ink-blots, brushing of shoes, and wet soap. We are plain workaday teachers, and this is what the practice of virtue means when translated into our plain workaday experience.

Influences of Environment.

The second factor in moral training is environment. "It is a happiness," says "Religio Medici," "to be born and trained into virtue, and to grow up from the seeds of Nature rather than the inoculations and forced grafts of education." What Sir Thomas meant by the seeds of Nature we mean by environment, and the only difference is that we include it in the word "education"—he does not. We use the term to include the locality, the buildings, the arrangements, the discipline which surround the child as it grows. In this matter, the school, obviously, unless it be the boarding school, plays a subordinate part to the home. As Mr. Leighton points out, not more than 20 per cent. of a boy's whole time is spent in school. The real lesson of Mr. Leighton's remark seems to me to be not a lesson of discouragement—that we should give up the attempt: the real lesson is that we should do far more than we are at present attempting, first of all, to secure the sympathy and co-operation of the parents by getting them into living touch with the teachers and so to understand the aims and methods of our school discipline; secondly, to secure for the teacher, and especially for the teacher in the public elementary school, a far greater measure of control over his pupils in their out of school hours than he at present possesses. It is monstrous, for instance, that a teacher should not be able, without becoming liable to an action for assault, to stop a boy of eight from picking up the fag-end of a cigar and smoking it in the street.

What, then, can environment, including school discipline and arrangements, do for character building? Environment and habit can practically kill by atrophy some of the undesirable impulses of our nature. If there is no opportunity for their exercising themselves, they will die from sheer lack of nutrition.

> Use almost can change the stamp of Nature
> And either curb the Devil or throw him out
> With wondrous potency.

It is a great thing, then, to start with, if environment can throw out the Devil, banging, bolting, and barring the door on those avenues by which he reaches the soul; but it can do more: it can help to foster the angel, and that in subtle and incalculable ways. We remember how Wordsworth tells us that the voice of Derwent "blent its murmurs with his nurse's song" and "flowed along his dreams." Of what kind is the beauty born of such murmuring sounds as our urban streets afford—the beauty that passes into the soul of the modern urban child—I tremble to inquire. But it is well to remember that even such a slight and temporary thing as the tone of voice adds to the wealth or illth of a child's inner nature. The quality and the amount of the school music, the brightness, airiness, and decoration of our school buildings all sweeten the thought associations of the work which is done in them and add to the attractiveness of the things that are more excellent. The right ordering of rewards and punishments, of praise and blame, the strictness with which we exact account of all moneys handled in connexion with our school activities, the rules and regulations, the tone of the common life of the school, with its recognized standards of honour and the reverse—all these are producing their invisible effect day by day upon the plastic organism which grows up under them. The prefect system of self-government—devised, in the first instance, as a labour-saving contrivance—became in the hands of an Arnold the means of penetrating the inwardness of school life into which the master himself never reaches.

Still better is it if the scholars themselves are not entirely passive, but take an active share in the bettering or beautifying of their own environment; for action is of the essence of morality. The buildings may be irredeemably dingy and dull, but, if the scholars themselves by their own efforts, by tending plants or painting their own decorative frescoes, make them less ugly, they are moving, at any rate, in the right direction, and they are learning at the same time the spirit of social service which is the great need of our time.

When we get all that is fair in outward surrounding, a high tone in the present which links on to an honourable tradition of the past, combined with a strong compelling sense of what a fine thing it is to do something for the common well-being, then you may expect that fairest product of all moral training—the man and the woman to whom goodness comes as the natural functioning of a noble nature, to whom wrong is wrong, not because it is a breaking of rules, but because it is by nature repulsive: and right is a thing they love—not a mere keeping of rules, but a positive and desired good which the nature loves so much that it misses no opportunity of receiving it into the soul. Happy such spirits, so nurtured, in their after life—

> Great thoughts, great feelings come to them,
> Like instincts, unawares.

Impartment of Definite Moral Ideas.

I pass on from environment to the next great department of moral training, the imparting of definite moral ideas—what Plato would call "nurture." Here I confess Prof. Sadler's question puzzles me. Evidently he wishes it to be systematic, and he asks us to choose between three alternative methods or any combination of the three. Shall this systematic moral instruction be (*a*) through the teaching of literature and history, or (*b*) arranged as part of the definite religious teaching, or (*c*) through a graded course of moral instruction on non-theological lines? What I fail to understand is this: if the course is to be systematic, covering the whole ground—that is, of duty to self and others—how can it be given through literature and history? You can't select in history: you must take men and events as they come. The same applies to literature: you select in the first place the author and the work, but you are bound to be guided in your selection mainly by the difficulty or absence of difficulty in the content and style of your author. Bacon's "Essays" may suit your scheme of moral instruction for a class of age thirteen; but I pity the teacher who is set down to teach it, and I doubt if much of this moral instruction will arrive at its destination.

The conclusion is inevitable. History must be taught as history and literature as literature: both of them are full of moral instruction, they will widen the field of the ideas and the sympathies, they will touch the aspiration—all this will come, but it will not come systematically; it will come by growth; the mind will seize on and assimilate that which is proper to its own nutriment. We shall sow the seed, and underneath the surface, where we can neither see nor control, the seed will grow; from within it will blossom and bear fruit. The only matter for us is to do the gardening well, to teach our history and literature well (quite enough in itself for most of us, I imagine), and to be

ourselves intensely alive in thought to the moral issues of what we teach.

I think the same applies to the definite religious teaching. I am frankly afraid of the word "definite" in this connexion. The greater the measure of definiteness, the less is apt to be the measure of tolerance and charity. For secondary schools, at any rate, the Bible stands as yet unchallenged. We teach the Bible because we know no better handbook of practical ethics.* We teach it to many whose "'doxy" differs from our own. We do it without difficulty or quarrelling. Pamphleteers and platform firebrands have been on the look out for cases of subtle propagandism in schools, and they make the most of what they find; but, so far as I know, they have not yet found any clericalism on the one hand or agnosticism on the other in our secondary schools. We believe the Book itself contains all that we need for right living, and all we need to know of the nature of the great "not ourselves." Let peace remain: let the Bible remain; let it remain unsystematized, lest we lose it altogether.

Graded Non-Theological Moral Instruction.

I come now to the third suggested alternative—a graded course of moral instruction on non-theological lines. How this world loves to cheat itself with words! Somebody claps a new name on to a thing which is as old as the hills, and immediately it is hailed as an original idea, and a League is formed to propagate it. Here we have every church and chapel giving direct moral instruction, both to children and adults, giving it with all the advantage of a special building consecrated to the purpose, with all the special associations which invest it with dignity and power and earnestness, and somebody comes along—somebody presumably who lives outside the religious world—and says: "This is rather a good idea; let us adopt it in the schools. We will strip off the superstition, we will leave out the exploded fallacy called God, we shall not need the sanctity of place or worship; we will reduce the whole thing to the least common factor, and with this we will train the character of the rising generation."

Legitimate Occasions for Direct Speaking.

My fellow-teachers, I cannot believe that, if character could have been built up by text-books, it would have been left till the twentieth century either to write those text-books or to apply them. Do I wish to exclude altogether direct moral instruction? By no means. There are times and occasions when we fail in our duty if we fail to speak out straight and strong on these matters. When a boy is going to his new school (especially if he is leaving home for the first time), at the end of the term (and especially if he is leaving school), when new prefects are appointed and installed; on one of those special occasions, either national, or, like founders' commemoration, peculiar to the school, when all look for it and feel it to be right, and are ready to be impressed; when there has been some offence which needs to be set out in its true colours, or seems to be due to moral illusion or ignorance, or shown to be dishonouring not only to the individual offender, but to the good name of the whole community to which he belongs—on such occasions we speak publicly: we always have done. On other occasions we speak privately and individually. When we have noticed symptoms, and are beginning to feel anxious (the very fact that you are felt to be watching means more than you can tell); when there crops up in conversation, or in course of the lesson, some remark, perhaps some quotation from a newspaper, which shows lack of feeling, lack of moral taste, injustice to the poor, a coarse and worldly standard of judgment: most frequently, perhaps, in the estimate oneself expresses, and is expected to express, on the popular writers, the public men, the fashionable crazes of the day—Rudyard Kipling, motor cars, living statues, the new Betting Acts (this is the method of old Ofellus which so much impressed the youthful Horace)—on all these occasions the school-teacher may legitimately use direct moral instruction and precept. It is legitimate because it is effective, and it is effective because our scholars feel that the occasion justifies it, and the text is provided before the sermon is preached.

* "Our Bible comes nearer fulfilling this ideal (*i.e.*, a perfect, normal, and uninterrupted history of the human soul) than any other literature. . . . It depicts the development of mansoul in a way which, if it is rightly understood, leaves the best classics of the best races far behind." (Stanley Hall, "Adolescence," Vol. II., page 360.) See the same conclusion worked out more fully in "Some Fundamental Principles of Sunday School and Bible Teaching." (*Pedagogical Seminary*, December, 1901.)

"Grave Risks."

But shall we be able to say the same if moral instruction finds a regular place so many times a week on the syllabus? As such it seems to me to involve certain grave risks. I am open to conviction—the accomplished fact will convince me; but, until the fact is accomplished, I am against it: and perhaps you will allow me to give some of my reasons.

Doses *versus* Diet.

First, it makes character a separate subject of the curriculum, instead of being beneath, acting through all the subjects of the curriculum and the school activities. There is a subtle danger here for both teacher and taught. The teacher who has bought his handbook for 4½d., and has fired off his series of lessons according to prescription, is in danger of thinking that he has done all that belongs to his duty of moral training; the pupil is apt to think that, if this hour is specially moral, then the other hours are not specially moral. My own conviction is that character is not something distinct in man's nature; it comprises the whole being, physical and moral, past and present; it pervades the whole man. Moral training, therefore, must be a matter of diet, not of doses.

Ideas *versus* Practice.

Again, I do not deny that by systematic moral lessons you may convey to the mind of your pupils many ideas about morality; they may be able to write quite finished essays and explain, say, the different kinds of courage, and how courage lies in the mean between cowardice and foolhardiness in a way that would gladden the heart of old Aristotle. But will they necessarily be courageous because they can talk about it? I know many youngsters who can tell me all about cricket and football; they know the past records of the clubs and their prospects for the future; they have a fund of information and statistics at their finger-ends which is to me (who know them in class) amazingly accurate. But are they cricketers? Very far from it. Most frequently their skill on the cricket field is in inverse proportion to their powers of talking cricket "shop." We can have this same sort of thing in morality. Do we want it? Is it worth getting, when we have got it?*

Directness *versus* Suggestion.

Thirdly, some of us have not forgotten how we were directly enjoined by letter, circular, advertisement, and even telegram, to purchase a certain encyclopædia, which need not be further described, and some of us have never yet got over our aversion to the book which that excess of direct exhortation produced in us. We must beware of intruding these pushful Yankee methods into the subject for which we care most. They defeat their own end. The direct insistent suggestion, unless it is felt to be justified by the occasion, provokes at once, and specially so in the stronger natures, either a whole host of contrariant ideas or, what is just as bad, if not worse, a feeling of boredom and indifference. By far the most effective mode of suggestion is auto-suggestion—lead the mind to what you desire, but let it draw the inference itself—it is this which lends its special charm to humour: we enjoy it because we have to see the joke for ourselves. Jokes which are explicit are not jokes: text-books and teachers would be infinitely more effective if they were less explicit and taught rather by suggestion.

The Right Lesson at the Right Period.

Even supposing that we get our lesson home, and, what is more, that lesson translates itself into action, will that suffice? Are we quite sure that the lesson we have taught is the right one for the particular period of that child's development? Is there not a danger of expecting adult virtues from immature characters? Charles Lamb does not tell us how old he was when "in the coxcombry of taught charity" he gave away to the unseasonable pauper the cake which had just been given to him, but he tells us the after effect of his premature magnanimity, and it was an effect very far from the one desired: "I walked on in the pride of an evangelical peacock."

In the earlier period of childhood the right method of moral education is by command, the motives are pleasure and pain, the method is vigilance. The period of adolescence needs other methods, answers to other appeals, warms to ideals.

* The important distinction between ideas about morality and moral ideas is well brought out by Prof. Bosanquet, "Civilization of Christendom," page 179: "The idea that it is specially desirable to feel good, or to feel bad, is an idea about morality: the idea of a particular good thing to be done is a moral idea." The whole essay is to the point.

Lessons must be lived.

Again, thought and emotion are not all, nor are they the chief thing; and, unless they be translated into actual endeavour, they may do us mischief, both subtle and irreparable. This is the main argument against much novel reading, or theatre going, or sermon listening, even when the novels, theatres, and sermons are good of their kind. The noble impulses and sympathies and aspirations are roused, but not translated into action. Tolstoy's Russian lady of rank weeps in the theatre over the trials of the hero, and works off her feeling in tears, with never a thought for her own coachman, frozen as he waits wearily outside. Here are two boys who go to a hygiene lecture and learn more than ever I knew about the importance of keeping the mouth clean and the dangers of not so doing. But neither of those boys cleans his teeth either that evening or the next morning. It is not enough to have the idea; it is not enough to have it well in the focus of the mind, or even to have it reinforced by ideas of advantage. All this may be true of the boy who lies in bed in the morning after the hour has struck for getting up; but the real moral lesson for that boy is to pull off the blankets and apply the cold sponge. The assent of the mind is not enough: the consent of the will is what we need for action, and, if the will does not consent, we must play the despot and force it to consent, and keep on the forcing until the habit is formed which is too strong for the natural inertia. A command followed by an act saves multiplication of words, and is all the more effective on that account. If a boy is inattentive in class, instead of rebuking him and telling him to pay attention, instead of sermonizing, which interrupts the class and makes all suffer for the sake of one, pop a question at him, or hold out the chalk and say: "Just write that word on the board." The boy at once understands you have noticed his inattention. You have reproved it; you have started him on an act which itself inhibits the wrong inclination. If a boy is inclined to cruelty, give him a dog as a pet, and he will learn kindness by doing it. In a word, the real moral lessons must be lived to be understood; "die Philosophie muss geliebt *und gelebt* werden," as Goethe puts it; and the glorious thing about doing is this, that, while passive impressions grow weaker by repetition, active impressions, on the other hand, grow stronger by repetition; and weave the strong cable of habit. "By obedience," says Plato, "we take in the laws as a dye," and it is a fast colour: neither pleasure nor pain, neither fear nor appetite, will be able to wash it out. Light, too, comes as the reward of obedience. Right thought does not always or necessarily produce right action, but right action always and unerringly produces right thought.

The Teaching of Love.

Before passing on to my last point, I should like to reinforce what I have said by quoting a passage on the teaching of patriotism from one who did not speak much but spoke always to the point:

> If our love for our country [he says] is to be sincere, without ostentation and affectation, it cannot be produced immediately by instruction and directions, like a branch of scientific knowledge. It must rest, like every other kind of love, on something unutterable and incomprehensible. Love may be fostered; it may be influenced by a gentle guidance from afar; but, if the youthful mind becomes conscious of this, all the simplicity of the feeling is destroyed, its native gloss is brushed off. Such, too, is the case with the love of our country. Like the love for our parents, it exists in the child from the beginning; but it has no permanency, and cannot expand, if the child is kept like a stranger at a distance from his country. No stories about it, no exhortations will avail as a substitute. We must see our country, feel it, breathe it in, as we do Nature. Then history may be of use, and after a time reflexion, consciousness. But our first care ought to be for institutions in which the spirit of our country lives without being uttered in words and takes possession of their minds involuntarily. For a love derived from precepts is none.

I quote this passage because what Passow says of love of country is true of all other loves, and love is the fulfilling of the law. The way to teach love is not by precept, nor is it, in the first instance, by stories about it. If you wish your child to love goodness, then you must let him see it, feel it, breathe it in, catch it by contagion, and seek to do its deeds.

"Something left out."

And so I come to my last point. When I look at the syllabus of the Moral Instruction League I feel as a certain shrewd head master felt on reading a flamboyant set of testimonials: "There is a strong smell here of something left out." That something left out in the case of testimonials is usually the most vital thing of all, and it is so here. What is it? The syllabus is drawn "on non-theological lines"; or, in plain English, it shuts out God. That is to say, it leaves out the ultimate sanction of all ethics and the only power by which conduct can be made ethical. I shall be told that conscience antedates Christianity. Granted, but it does not antedate God; and I know of no explanation of this same conscience and the authority which it asserts over all the other parts of our nature, except that it is the Divine Voice within: moreover, you will forgive me if, as a Scotchman, I say that I know of no chief end of man except that which was taught me in my Scottish Catechism—"to glorify God and to enjoy Him for ever." Any other foundation is sand. You can no more learn right conduct and secure the power to fulfil it without reference to God than you can explain the orbit of the Earth and the process of the seasons without reference to the Sun. Man cannot rightly adjust his everyday relationships of home and household, of duty and society, if he treats them as though they were all and as though he himself were a mere creature of the day, an over-developed ape, a caretaker on a globe doomed to sterilization and destruction. Before he can get these everyday relationships rightly adjusted he has to recognize that he is himself a not yet developed angel, and over him and all his doings he must recognize the supremacy of other, higher, Eternal, and infinite realities, into subjection to which he must bring all the things of the hour. In a word, morals break down without religion, just as surely as religion breaks down without morals.

I suppose there never was a more promising movement for moral reform than that in the Roman Empire of the second century A.D. The movement had begun before Marcus Aurelius; when he came to lead it and himself delivered to the Senate a succession of addresses on morals it seemed as though it was backed by all the resources of the civilized world—wealth, learning, culture, genius, eloquence, the patronage of supreme political power. But it was a failure, while Christianity, with all these resources of culture, with the whole world—civilized and uncivilized—arrayed against it, carried the day against overwhelming odds and opened up a new epoch and a new hope for the human race. Why? Because it had within it and behind it the omnipotence of the infinite, because it found the fulcrum for its lever in a world outside and beyond, therefore it had power "to uplift the earth and roll it on another course."

This is the power which unifies with one central purpose all the scattered strands of pursuit and purpose and aspiration, which can quicken moral numbness, restore us when we fall, beat down temptation under our feet, which gives us a strength not our own, and not only sets before us a new and higher morality, but suffuses all the old morality with a new glow of joy and a freshness born of the skies.

Influences through Personality.

This great and inspiring idea must be embodied in a person, must be interpreted and act through a person. Religious men and women are out of all comparison more important than any syllabus of religion, however perfect. Ideas, even the best ideas, are often, as George Eliot says, "poor ghosts. But sometimes they are made flesh; they touch us with soft responsive hands; they breathe upon us with warm breath; they are clothed in a living human soul, with all its conflicts, its faith, and its love. Then their presence is a power." These are they of whom the poet speaks:

> Whose thoughts, like bars of sunshine in shut rooms,
> 'Mid gloom all glory win the world to light.

And Mrs. Browning has descried the silent influence of one such woman:

> She never found fault with you, never implied
> Your wrong by her right, and yet men at her side
> Grew nobler, girls purer, as thro' the whole town
> The children were gladder that pulled at her gown.

It is this silent, almost unseen factor that counts for most—the radiation, I will not say *of* personality, but *through* personality, of a higher, holier power not ourselves.

"The Thing that endures."

When all we have said or done is forgotten, when our academic successes, our cleverest lessons, our brilliant achievements in administration, in school expansion, or, it may be, in sport or in literature—all these have become a prey to dumb forgetfulness,

this influence will survive; "what we were like" will be remembered. A small boy who was at Rugby in Dr. Arnold's time, when asked in his old age what he remembered of Dr. Arnold, said this: "I remember there was a row in one of the studies—drinking or something of that sort: it was reported to the Doctor and he went along to stop it. I hid behind the door of my study to watch him as he came back along the passage: I remember the look in his eye—it taught me for the first time what sin was." Not, therefore, what we say, or even so much what we do, but what we are, is the thing that endures—the ultimate lesson, good, bad, or indifferent, which each one of us teaches. If there is in us this quality, which in Arnold was called "moral transparency," then, like Arnold, we shall be backward to speak about these secret things that rule the heart. It is not needed, and all the great vital processes are secretive. We shall be backward to speak, but we shall not be backward to love, and love wins love, and nothing is so educable as love, nor has anything so many incalculable opportunities to impart itself: with every meeting, every parting, every chance word of greeting that we toss each other as we pass, every glance of the eye, it is given or it is withheld. Love radiates into other natures as surely as any physical rays: it is no more to be withstood than any other natural force. Our profession gives more chances and channels for it than any other, and for that reason it is the noblest profession of them all.

"Magnify your Office."

Magnify your office: it is by magnifying the office that we keep our personality in the right and humble frame. There is always the danger when one speaks of personality that folk should think we wish to stamp our personality upon the child. I hope none of us has sunk to that depth of self-complacence. The higher our ideal the more likely are we to know our own littleness and to place our hope and our strength in the great Omnipotence that makes for righteousness, the anchor that is within the veil, and that

High Light whereby the world is saved.

REVIEWS.

The City States of Lombardy.

The Lombard Communes: a History of the Republics of North Italy. By W. F. Butler, M.A., Professor of Modern Languages, Queen's College, Cork. (15s. net. Fisher Unwin.)

While availing himself of the labours of earlier historians in the collection of facts, Prof. Butler has laboriously checked their statements, and he has further put original work into his book by an independent interpretation of the significance of the facts. Thus, he combats Lanzani's (and Ferrari's) theory of the origins of the internal feuds of the Italian cities—namely, that the factions were, in a large measure, the result of antagonism between the civic nobility, men of Roman descent, or at any rate of Roman ideas, and the country nobles, men of German ideas, forced by the burghers to live within the city walls. In this he has been partially anticipated by Salzer, but he works out the proof more effectively. Again, he shows that Leo and Sismondi, in dealing with the factions of the north-east of Italy in the early part of the thirteenth century, have misrepresented the attitude of the house of Romano towards the Empire and towards the nobles. He also presents a fresh view of the real origin of Guelf and Ghibelline factions in the interior of the Communes. Prof. Butler has patiently unravelled the tangled skein of events, and presented them in orderly disposition in a lucid and engaging narrative. He sets forth "the history of the city life of Lombardy, the rise of republican institutions in the face of the feudal system which prevailed in Western Europe, the contests which resulted between the two opposing principles, the conflicts between city and city, and the final extinction of freedom at the hands of tyrants, themselves for the most part the offspring of republican institutions." The work is a valuable addition to the English historical library. It is furnished with six very careful maps, modifications of those given in the historical atlases of Spruner-Menke and Droysen, illustrating the changing predominance of the factions from the beginning of the thirteenth nearly to the middle of the fourteenth century. There are also about fifty excellent full-page illustrations.

The Lombardy of the Communes, wider than the Lombardy of our times, may be taken to include the whole space between the Alps and the Apennines watered by the Po and its tributaries. Prof. Butler opens his work with an ample description of this area, the physical features of which have a most intimate connexion with the historical developments he traces, "the short distances from city to city tending inevitably to intensify hostile feelings, and the differences in situation"—plain, or rock, or mountain-top—"leading to a difference in the political life of each." The second chapter surveys the conditions, social and political, under the rule of Roman, Lombard, Frank, Counts, and Bishops. We now come to the Rise of the Communes, when the cities threw off the yoke of the Bishops and stood forth free republics, owning however the universal supremacy of the Empire. The central episode is the first conflict between Milan and Pavia—"between 1013 and 1150 we find a chronic state of enmity between the rivals, with six actual wars"; and it is also shown how the War of Investitures "gave the cities an opportunity to emancipate themselves from the rule of the Bishops and to take up a very independent attitude towards the Emperor." But "the first use the new-born municipalities made of their liberty was to engage in a fratricidal struggle with one another; and thus begins that war of city against city which fills the whole of their history, and which is their disgrace, but at the same time makes their story one of such absorbing interest." Why should they war on each other? Commercial jealousy, quarrels over tolls and roads, and especially over the use and regulation of the watercourses for agricultural purposes, boundary disputes (especially where the limits of county and diocese did not coincide), the relations between the towns and the county nobles: there was no lack of material for strife. Moreover, not only did city fight city, but cities also fought castles, and the war against the castles bred new causes of quarrel between the cities. And so "the first fifty years of the twelfth century were filled with a confused strife spreading from the greater cities to the smaller communities of freemen, and the innumerable castles which then rose above the plains or crowned the foothills of the Alps and Apennines."

At the head of the each of the city States were the Consuls—in 1130 Milan had twenty of them—exercising supreme executive and judicial functions, with the command of the military forces in war time. The Consuls had as advisers in important matters a sort of Privy Council (*Credenza*), chosen from the most experienced and dignified burghers. In later times, at any rate, there was also a General Council or Senate of several hundred members chosen from the various classes of free citizens. And, as ultimate depositary of all power, there was the general assembly of the burghers (*Parlamento*), assembled on special occasions by way of a sort of referendum. This constitution rested on older and simpler institutions: the trades guilds—associations of the middle and lower classes; and the protective associations (*Consorterie*) of the Captains and Valvassours, which had their foundation in kinship, and are still commemorated by their lofty fortified towers in some of the towns, as Mantua and Bologna. "Their numbers became enormous. Pavia is still called the 'city of the hundred towers.' In Bologna we know of at least 180. Verona and Lucca boast of having at one time had the amazing number of 700." The new municipal organization was markedly aristocratic, and, owing to the need of experienced leaders, military; but it was open to wealth. When, however, the Consuls began to name their successors the caste tendency began to grow; and in the thirteenth century class hostility emerged. "Much of the subsequent history of the Communes depends on this quarrel between the middle classes and the nobles, and the gradual extinction of the power of the latter." Then came the struggle between the middle classes and the lower orders, and in Lombardy this opened up a chance for the interposition of the tyrant.

Above the sporadic minor conflicts rises the ten years' struggle waged between Milan and Como (1118–28), which Prof. Butler narrates with spirit and in some detail as vividly illustrative of the fratricidal contests of the cities, of the degree of independence they had attained, and of "the wonderful outburst of energy and the intense patriotism which liberty had produced." "Besides," he says, "there can be little doubt that it was in this long struggle that the Lombards acquired the experience in warfare and the spirit of self-reliance which in the next generation enabled them to defy the power of the Empire." The Emperor had not interfered in this war: the quarrel with the Papacy over Investitures was not settled till 1122, and then came the quarrel over the succession to Henry V. in 1125. Neither of the rivals succeeded in establishing any permanent hold on Lombardy; and the fifteen years of Conrad's reign (1138–52) was a period of increasing confusion in Italy. Barbarossa, however, brought his

heavy hand down on Milan, and after several years' struggle "not a fiftieth part of the lordly city remained standing." His victory, however, had been secured less by the valour of his German troops than by the efforts of his Italian allies—Lodi, Pavia, and the other cities near Milan; and the obvious value of union, emphasized by the Emperor's tactless and indeed careless administration, led to the establishment of the Lombard League—not a real organized federation, but a mere confederation of independent cities bound together by a common danger, without regular constitution or central body. The object of the confederates was simply to free themselves from the obligation "to pay tributes or render services greater than those which they had given or rendered from the time of the Emperor Henry [? V.] to the entrance of Frederick" [Barbarossa]. After striking ups and downs of war and truce, the League gained all its demands by the Peace of Constance (1183). Prof. Butler writes:

There is perhaps no other struggle in the history of the world in regard to which the sympathy of the narrator and the reader can be so fully accorded to all the contending parties. The great figure of Barbarossa—the legendary hero of the German race—upholding what he regarded as the sacred rights of the Empire; the steadfast and lofty-minded Pontiff, the champion of the freedom of the Church and of the liberties of the Communes; the nameless heroes, with their watchword "Liberty," who closed round the war car of Milan at Legnano; the unknown statesmen who planned the League—all deserve our admiration and compel our respect.

"We should have a higher opinion of human nature," adds the author, "if we could close our history here."

The history proceeds, however, to the conquest of the Contado, a long and complicated but clear narrative, embracing much information on the social and political developments of the time as well as a record of the progress of the disastrous feuds. Then we have more wars of the cities—inevitably a typical selection of important movements, for "Ferrari makes the curious calculation that during the period from 1190 to 1250 no less than 1,465 combats are recorded between rival Communes, without taking into account the conflicts between smaller places dependent on greater cities." Prominent are the factions of the Mark, introducing the rise of the Romano house, the family of Montecchi (Shakespeare's Montagues), and the parties later known as Guelf and Ghibelline. The wars were desultory—raids, isolated attacks; and, even if there was a big battle, nothing much came of it, except prisoners and trophies. Trade went on briskly; cities adorned themselves architecturally; and the spirit of enterprise was developed by rivalry and danger. The long story of the luckless Frederick II.—*stupor mundi* (Matthew Paris), "the most wonderful man in a wonderful age" (Freeman)—brings us down to 1250. The struggle between Frederick and the Second Lombard League had proved disastrous to the Communes as well as to the Emperor. They had been compelled to put the supreme direction of their affairs into the hands of individual rulers, to withstand enemies without and to control factions within. The rest of the history shows "how one and all, a prey to internal faction and engulfed in the conflict of Guelfs and Ghibellines—which divided all Italy into two hostile camps—the Communes lost the liberties for which they had struggled so hard, and sank under the yoke of the despot."

Cambridge Mathematical Tracts.

"Cambridge Tracts in Mathematics and Mathematical Physics."—No. 3, *Quadratic Forms and their Classification by means of Invariant Factors.* By T. J. I'A. Bromwich, M.A. (3s. 6d. net.) No. 4, *The Axioms of Projective Geometry.* By A. N. Whitehead, Sc.D., F.R.S. (2s. 6d. net.) (Cambridge University Press.)

Some time since we noticed Nos. 1 and 2 of this very valuable series of publications. The tracts now under review deal with subjects of equal interest to many students of mathematics, and, even from purely external evidence, it will be assumed with confidence by intending readers and by mathematicians generally that the high character of the treatment of the subject-matter which marked the first two volumes will be no less a feature of their successors.

In his preface to Tract No. 3, Prof. Bromwich explains that it has been necessary to employ methods adapted to a condensed line of argument in order to keep the text within the prescribed limits, and at the same time to avoid making the completeness of the discussion suffer from the restricted space at disposal. To enable him to carry out successfully his twofold purpose he has selected a mode of treatment which is based substantially on that of Kronecker in contradistinction to that of either Weierstrass or Darboux. The mode is not only suitable for a comparatively brief demonstration of the subject, but it also often affords opportunities for a geometrical interpretation of the theory, and, further, it admits of ready application to particular problems. The writer makes no attempt to describe the methods of Weierstrass or Darboux, and fully justifies the omission on the grounds that, since the treatise is intended to be suggestive, and not exhaustive, and since the methods in question may be found elsewhere (as indicated by the valuable bibliography given at the end of the present treatise), the space is better employed in rendering the chosen treatment more nearly complete. The author has, with true wisdom, noted the advantage to be derived from impressing a student with a sense that the discussion undertaken is one of real utility and that it does not comprise simply an ingenious theory whose details appeal only to a mind of particular bias. Hence the fifth chapter of the tract, which is devoted to illustrating some of the directions in which the theory may be usefully applied.

Turning to Tract No. 4, readers will find a most valuable analysis of the fundamental ideas which are embodied in projective geometry and which are independent of any given system of axioms. The author builds up gradually a consistent system in order that he may introduce the various principles involved in his subject. His plan is excellent; for he commences by laying down, as a preliminary set, a small number of axioms, all of which, except one, are equally applicable to both descriptive and projective geometry, whilst the remaining one requires the geometry considered to be projective. Some idea is given of the extent to which progress can be carried by means of these axioms alone, and then the reader is led to consider theorems which require for their proof the use of Desargues' Theorem, and hence demand the acceptance as axiomatic of the existence of three-dimensional space. This is a sample of the writer's method throughout—namely, the addition of a fresh axiom when a stage is reached at which it becomes necessary to further progress, and we can conceive no more effective means of creating in the student's mind a sense of what are the essentials of his subject, or of enabling him to grasp fully the meaning of the theory with which he is occupied. It may well be anticipated that these necessarily brief tracts will prove important accessions to mathematical literature, and we shall look with interest for the further numbers promised by the editors of the series.

Plant Life in Nature.

Introduction to Plant Ecology. By the Rev. Prof. G. Henslow, M.A., F.L.S., &c. (2s. 6d. Stanford.)

"Ecology" is a term invented by Haeckel to denote "the study of living beings at home"; or, as Prof. Henslow expands the expression, "ecology is the application of morphology, anatomy, and physiology to the actual requirements of plants, just as they live in Nature, and not merely to treat them as objects of study in the schoolroom and laboratory—as if the science of botany were quite independent of the way plants grow in the wild state." An ecologist makes three classes of observation. First, he regards the external conditions of life and notes how and why a plant can maintain itself in the struggle for life by natural selection—"the survival of the better adapted under the circumstances." Next, he makes morphological, anatomical, and physiological observations on plants, both in the field and in the laboratory, in order to ascertain their immediate adaptations to environment. Thirdly, when transported seeds germinate and develop in a new area of different external conditions, he inquires how the plants vary in response and adaptation to such conditions, originating varieties, sub-species, and even species. Prof. Henslow had already, before the invention of the term "ecology," treated the subject, and more particularly the second and third classes of ecological observations, in two instructive and charming volumes of the International Scientific series on "The Origin of Floral Structures" and "The Origin of Plant Structures." The present volume is a plain introduction to the study, specially suitable for candidates at the more enlightened examinations in botany, and perfectly lucid to the private student. The work is extremely well balanced. In a masterly way Prof. Henslow prescribes the order of study, emphasizes the relative importance of parts, and makes everything lead up to ecology. Morphology "is the only true basis of the science of botany," and the tendency to depreciate it is "a fatal error," apparently arising "from a mistaken view of its value. External morphology *must* be taken first, then internal morphology

—*i.e.*, histology or anatomy; and both, hand in hand with physiology: collectively they form the basis of ecology." Classification, while altogether secondary from the point of view of ecology, is primarily important to systematic botanists, and from the point of view of evolution. It is similarly valuable in its proper place and degree. Experimental and laboratory work should proceed simultaneously with morphology, and should be directed to ecology. At present, the author thinks, "laboratory work is treated too independently and without leading the pupils to any such view at all." Coming to the practical study of plants at home—that is to say, during walks and botanical excursions—Prof. Henslow deals with them in "associations" or groups: Xerophytes (drought plants), Hygrophytes (moisture plants), Hydrophytes (water plants), and Mesophytes (plants of intermediate conditions)—devoting one or more chapters to each of these associations, and showing what there is to observe and how to investigate them ecologically. The last two chapters deal briefly, but pointedly, with Natural Selection and Evolution. The little volume will be warmly welcomed both for its large outlook and for its precise handling of details. It will be most serviceable alike to teachers and to pupils.

GENERAL NOTICES.

CLASSICS.

An Introduction to Comparative Philology, for Classical Students. By J. M. Edmonds, M.A., late Scholar of Jesus College, Cambridge, Assistant Master at Repton School. (4s. net. Cambridge University Press.)

Mr. Edmonds writes for pupils in preparation for classical scholarships, and he recognizes that "the ordinary sixth-form boy knows little of phonetics and nothing of Old English," and has other gaps in his knowledge that counsel simplicity of treatment. After a general chapter on the study of language, he explains the mechanism of speech and the classification of sounds, with the help of diagrams and tables. Next he deals with accent, spelling and pronunciation (with a sketch of the history of our alphabet), and the "family history" of Greek, Latin, and English. Then he considers the causes of change, and its phenomena in the classical languages — vowel gradation, Grimm's Law (and the exceptions to it), and the different development of sounds in Greek and Latin. A sketch of the history of comparative philology concludes the volume. The exposition is accommodated to the special purpose of the book, so that simplicity rules out various subjects and much detail; but the main points are skilfully selected and lucidly stated and illustrated, and, after all, the work conveys a large amount of useful instruction in a form that should lead the pupil to ask for more.

Sophocles' Antigone. Translated by Robert Whitelaw. With Introduction and Notes by J. Churton Collins, Litt.D., Professor of English Literature in the University of Birmingham. (1s. net. Clarendon Press.)

It is an excellent idea to offer to schools, university extension classes, the National Home-Reading Union, and the general reader Greek masterpieces in good translations, with all necessary explanations by way of introduction and notes. Mr. Whitelaw can hardly be said to be a poet: he does not even attempt to rhyme the chorus; but his translation is scholarly and interesting, and it will give a pupil ignorant of Greek a very fair idea of the Greek form of presentation. Prof. Collins sketches the life and art of Sophocles, explains the structure and the plot of the play, and remarks on its philosophy and teaching. The drama is undoubtedly "most subtly suggestive," and it "exacts and will repay the minutest and most reverent study." To that end Prof. Collins's introduction and notes will prove very helpful. We trust that the Clarendon Press will be encouraged to follow up the "Alcestis" and the "Antigone" with many other examples of the Attic drama.

MATHEMATICS.

A Preliminary Course in Differential and Integral Calculus. By A. H. Angus, B.Sc. Vict. (2s. 6d. Longmans.)

The idea with which this little work has been written is a sound one, namely, that for very many it is well that they should know the elements of the calculus and possess the power to use its processes, even though opportunity for a close study of the subject may be wanting. The plan of the discussion is good, and so, in many respects, are the details. But again and again the author fails to convey with strict accuracy the truths of his subject; and accuracy of expression, we must insist, is an essential, and not merely an accessory, in all mathematical work. It cannot be too often or too strongly urged that mathematical study should be carried on from the commencement in such a way that facts learned, whether few or many, may never have to be contradicted. Otherwise no useful advance can be made.

Geometry, Theoretical and Practical, Part I. By W. P. Workman, M.A., B.Sc., and A. G. Cracknell, M.A., B.Sc., F.C.P. (Clive.)

Since the commencement of the movement for reform in the teaching of geometry and of mathematics generally, there has been ample opportunity for watching the growth of a long and ever increasing array of text-books on geometry as distinguished from Euclid. Some of the new treatises have been mentioned from time to time as being very good; others have appeared to us far from satisfactory. The present volume should take a leading place amongst works of the former class. Its plan is sufficiently indicated in the preface, which will well repay careful reading. Those who appreciate the capabilities of Euclid as a means of valuable mental training will note with satisfaction the desire on the part of the writers to correct certain unfortunate tendencies observable in the new methods, and thus to enhance the value of the system of reform with which, on the whole, they are in entire sympathy. The scheme of references which they have adopted is, it must be admitted, rather cumbersome and elaborate; nevertheless, it marks a recognition of the great benefit due to the right use of references. After a preliminary section on drawing and measurement, the volume carries on the practical and theoretical work *pari passu* arranged with a view to the proper co-ordination of the two courses of study. Part I. of the complete treatise has been designed to include all that is expected of candidates preparing for the Preliminary Locals (either Pass or Honours) and for the Junior Local Pass Examinations of Oxford and Cambridge. The portions of the text which may be postponed to a second reading of the volume are carefully marked, and amongst these we notice Legendre's interesting demonstration of Euclid I. 32, by means of the theory of limits and independently of that of parallels.

(1) *Ebene Geometrie.* By Prof. G. Mahler. (2) *Projektive Geometrie.* By Prof. Dr. Karl Doehlemann. (80 Pf. each. Leipzig: Göschen.)

Both very instructive little volumes belonging to the long series of text-books issued as the "Sammlung Göschen." The author of each of the present treatises is an able exponent of his subject; and, whilst the books must naturally appeal more especially to German students, yet the general simplicity of the language employed in the demonstrations renders them (in theory, at any rate) readily accessible to readers who, though belonging to other nationalities, possess a moderate knowledge of German. The text is in each case illustrated by a large number of carefully prepared diagrams. The small scale, however, on which these have been reproduced must of necessity prove a serious drawback to their practical utility.

SCIENCE.

The New Physics and Chemistry: a series of Popular Essays on Physical and Chemical Subjects. By W. A. Shenstone, F.R.S. (7s. 6d. net. Smith, Elder, & Co.)

These essays attracted considerable attention when they appeared from time to time in the *Cornhill Magazine*, and many general readers, as well as students of the particular subjects, will welcome them in book form. Mr. Shenstone writes not only with ample technical knowledge, but in a fresh literary style which holds the attention of the reader. Of course, popular essays are not to be overloaded with details, but Mr. Shenstone, while avoiding this mistake, still manages to present efficiently the broad outlines, together with a good deal of information as to the historical developments. The great theories and the indefatigable researches that have been applied to the explanation of the material world are full of interest to every inquiring mind; and the present volume, while partly satisfying, will still more stimulate the reader to further and closer investigation. The constitution of matter, theories of the ether and of light, the weighing of a world and of an atom, a century's unfolding of chemical theory, the marvels of radium and of radio-activity, ferments and solutions—these are the main subjects of the varied essays. The final chapter, on the origin of life, gives just prominence to Redi's experiments and the practical value of Pasteur's researches. Occasional repetitions, necessitated by the original form of publication, are scarcely worth mention. A most instructive and interesting work.

A Text-Book of Organic Chemistry, translated from the German of A. Bernthsen, Ph.D., has for a considerable time been very favourably known. It has just been edited and revised to date by J. J. Sudborough, Ph.D., D.Sc., F.I.C., Professor of Chemistry in the University College of Wales, Aberystwyth (7s. 6d. Blackie). The scope and the broad outlines of the volume remain much the same, but the revision has been unsparing, and four new chapters have been added. Many references are usefully given to original papers in various periodicals, English as well as foreign. A very full, systematic, and solid work.

A Smaller Chemical Analysis, by G. S. Newth, F.I.C., F.C.S., Demonstrator in the Royal College of Science, London, and Assistant Examiner in Chemistry for the Board of Education (2s. Longmans), is practically an abridged edition of the qualitative section of the author's "Manual of Chemical Analysis," together with a chapter on simple volumetric processes. It is very practical and judicious work.

Mr. Randal Mundy, B.A., B.Sc. Lond., Lecturer at the Ashton-under-Lyne Technical School, has revised and materially enlarged his *Primer*

of Biology and Nature Study, which now appears in a fourth edition (2s. 6d. net. Ralph, Holland, & Co.). Six additional chapters are given. The volume covers the latest requirements of the Teachers' Preliminary and Certificate Examinations. The subject is most capably and very fully treated. There are 152 figures.

MODERN LANGUAGES.

Historical German Grammar. Vol. I.: *Phonology, Word-Formation, and Accidence.* By Joseph Wright, Ph.D., D.C.L., F.B.A, &c., Professor of Comparative Philology in the University of Oxford. (6s. net. Frowde, Oxford University Press.)

Prof. Wright opens with this volume his projected "Students' Series of Historical and Comparative Grammars." It is no breach of modesty for him to claim "that it is the most complete treatise of historical German grammar which has hitherto appeared in the English language." Yet he does not pretend that it is "in any sense an exhaustive treatise"; for, as he says, "to have treated the subject in great detail would have lessened the practical value of the book." The half is better than the whole—a maxim that is painfully impressed by many similar grammars in German. Dr. Wright has the practical sense to be content with a sufficient typical illustration of essential principles, so that his exposition is manageable and not deterrent. The details of the phonology, however, will probably be grappled with mainly by frequent reference. The accidence can be more readily taken in whole. The work is masterly throughout. The selection of points is judicious, and the presentation is orderly and lucid. The phenomena of O.H.G., M.H.G., and N.H.G. are systematically connected in historical development, with backward indagations to primitive Germanic and Indo-Germanic, and collateral references to allied languages and dialects. The selection, marshalling, and presentation of the material has evidently been a very prolonged and very laborious business. The index contains over four thousand entries. The work is most welcome: it does honour to English scholarship. But students must bring to the study of it a fairly good knowledge of modern German. The second volume, dealing with the Syntax, will be written by Dr. Fiedler, who hopes to have it ready for press early next year. The Oxford University Press deserves a special word of recognition for the liberality and excellence of the typographical devices as well as for general workmanship.

La France Monarchique: Scènes de la Vie nationale depuis le douzième jusqu'au dix-huitième siècle tirées de mémoires contemporains. Avec introduction et notes par George H. Powell et Oswald B. Powell, B.A., Bedales School, Petersfield. (6s. Blackie.)

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(*Continued on page* 308.)

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MATHEMATICS.

16041. (Professor SANJÁNA, M.A., and M. V. ARUNACHALAN, M.A.)—If $R_n = 1+\frac{1}{2}+\frac{1}{3}+\ldots+1/n$, prove that

$$R_1-R_2+R_3-R_4+\ldots \text{ ad inf.} = \tfrac{1}{2}\log 2.$$

Notes (I.) *by* R. J. WHITAKER; (II.) *by* L. ISSERLIS, B.A.

(I.) If $S \equiv R_1-R_2+R_3-R_4+\ldots$ ad inf., then, taking an odd number of terms,

$$S = R_1+(R_3-R_2)+(R_5-R_4)+\ldots = 1+\tfrac{1}{3}+\tfrac{1}{5}+\ldots \text{ ad inf.} \quad \ldots \text{(i.)}.$$

Also, taking an even number,

$$S = -\tfrac{1}{2}-\tfrac{1}{4}-\tfrac{1}{6}-\ldots \text{ ad inf.} \quad \ldots\ldots\ldots\ldots \text{(ii.)},$$

wherefore $2S = 1-\frac{1}{2}+\frac{1}{3}-\frac{1}{4}+\frac{1}{5}-\frac{1}{6}+\ldots = \log 2$ and $S = \frac{1}{2}\log 2$.

Note.—(i.) and (ii.) are both divergent; so it would appear to be more accurate to say that S is an alternating series whose sum is $+\infty$ or $-\infty$, according as the number of terms is odd or even, and that its values alternate at distances from $\frac{1}{2}\log 2$ which, though they are infinite, tend to become equal to one another.

(II.) Apparently the series $R_1-R_2+\ldots$ is not convergent. For the limit when $n=\infty$, to which R_n tends, is ∞. Hence, if ${}_mS_n$ = sum of m terms immediately following the nth, $\underset{n=\infty}{L}\,{}_mS_n = \infty$ or 0, according as m is odd or even, and therefore the series is divergent, or rather oscillates; so that the sum of an even number of terms is finite and that of an odd number is infinite. It would not be legitimate to say

$$\begin{aligned} S &= R_1-R_2+R_3-R_4+\ldots \\ &= \tfrac{1}{2}[2R_1-2R_2+2R_3-2R_4+\ldots] \quad \ldots\ldots\ldots \text{(A)} \\ &= \tfrac{1}{2}[R_1+(R_1-R_2)-(R_2-R_3)+(R_3-R_4)-\ldots] \quad \ldots \text{(B)} \\ &= \tfrac{1}{2}[1-\tfrac{1}{2}+\tfrac{1}{3}-\tfrac{1}{4}+\ldots] = \tfrac{1}{2}\log 2, \end{aligned}$$

because the series (B) is not necessarily the same as the series (A). (*Chrystal, Algebra*, Part II., chap. xxvi., §§ 8 and 7.)

16156. (R. F. DAVIS, M.A.)—Prove that the equation to a parabola touching the oblique axes Ox, Oy, whose focus is at the point (ξ, η), is $\sqrt{(x\xi)}+\sqrt{(y\eta)} = \sqrt{(\xi^2+2\xi\eta\cos\omega+\eta^2)}$ where $\omega = \angle xOy$.

Solutions (I.) *by* W. J. DOBBS, M.A., *and others*; (II.) *by* M. T. NARANIENGAR, M.A., *and* F. W. REEVES, M.A.

(I.) The general equation of a third tangent to the parabola $\sqrt{(x/a)}+\sqrt{(y/b)} = 1$ is $x/\lambda+y/\mu = 1$, subject to the condition

$$\lambda/a+\mu/b = 1 \quad \ldots\ldots\ldots\ldots \text{(1)}.$$

The equation of the circle circumscribing the triangle formed by the three tangents is $x^2+2xy\cos\omega+y^2 = \lambda x+\mu y$. As such a circle always passes through the focus (ξ, η), we must have

$$\lambda\xi+\mu\eta = \xi^2+2\xi\eta\cos\omega+\eta^2 \quad \ldots\ldots\ldots\ldots \text{(2)}$$

for all values of λ and μ subject to (1).

Comparing the equations (1) and (2), we see that

$$a\xi = \xi^2+2\xi\eta\cos\omega+\eta^2 = b\eta;$$

and, substituting for a and b, the equation of the parabola is obtained in terms of the constants ξ and η.

(II.) Draw SN ordinate; then

$$\angle OAS = \angle SOB = \angle OSN;$$

therefore OSN and OAS are similar, and

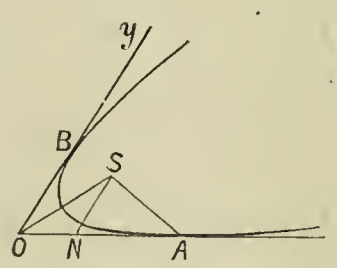
$$OA.ON = OS^2.$$

Similarly, $OB.SN = OS^2$.

Hence the equation to the parabola is

$$\sqrt{(x/OA)}+\sqrt{(y/OB)} = 1;$$

i.e., $$\sqrt{(x\xi)}+\sqrt{(y\eta)} = OS = \sqrt{(\xi^2+\eta^2+2\xi\eta\cos\omega)}.$$



16212. (W. J. GREENSTREET, M.A.)—Find the locus of the feet of the perpendiculars from the origin to the normals to Bernoulli's lemniscate.

Solution by S. NARAYANAN.

The equation of the normal to $r^2 = a^2\cos 2\theta$ is seen to be

$$r\sin(3\alpha-\theta) = a\sin 2\alpha\cos^{\frac{1}{2}}2\alpha,$$

or $$x\sin 3\alpha-y\cos 3\alpha = a\sin 2\alpha\cos^{\frac{1}{2}}2\alpha \quad \ldots\ldots\ldots\ldots \text{(i.)}.$$

The equation of the line at right angles to the above and through the origin is $$y\sin 3\alpha+x\cos 3\alpha = 0 \quad \ldots\ldots\ldots\ldots \text{(ii.)}.$$

Hence for the intersection of (i.) and (ii.) we have

$$x^2+y^2 = a^2\sin^2 2\alpha\cos 2\alpha.$$

Hence for all normals the locus of the foot of the perpendicular from the origin is given by

$$x^2+y^2 = a^2\sin^2 2\theta\cos 2\theta, \quad i.e., \quad r^2 = a^2\sin^2 2\theta\cos 2\theta;$$

or, in Cartesians, $$(x^2+y^2)^4 = 4a^2x^2y^2(x^2-y^2).$$

12236. (J. J. WALKER, F.R.S.)—If x, y, z satisfy

$$lx+my+nz = 0 \quad \text{and} \quad \Sigma mnx\left\{3u\frac{d^2u}{dx^2}-2\left(\frac{du}{dx}\right)^2\right\} = 0,$$

being any ternary cubic form, show that

$$2lmn\,\Sigma lyz\left(3u\frac{d^2u}{dy\,dz}-2\frac{du}{dy}\frac{du}{dz}\right) = \Sigma m^2n^2x(y+z)\left\{3u\frac{d^2u}{dx^2}-2\left(\frac{du}{dx}\right)^2\right\}.$$

Solution by S. SIRCOM.

From Euler's equations,

$$x\frac{du}{dx}+y\frac{du}{dy}+z\frac{du}{dz} = 3u, \quad x\frac{d^2u}{dx^2}+y\frac{d^2u}{dx\,dy}+z\frac{d^2u}{dx\,dz} = 2\frac{du}{dx},$$

and two others, we obtain

$$2yz\frac{d^2u}{dy\,dz} = x^2\frac{d^2u}{dx}-y^2\frac{d^2u}{dy^2}-z^2\frac{d^2u}{dz^2}-2x\frac{du}{dx}+2y\frac{du}{dy}+2z\frac{du}{dz}.$$

Multiplying this by $3u$ or its equivalent, this becomes

$$2yz\left(3u\frac{d^2u}{dy\,dz}-2\frac{du}{dy}\frac{du}{dz}\right)$$
$$= x^2\left\{3u\frac{d^2u}{dx^2}-2\left(\frac{du}{dx}\right)^2\right\}-y^2\left\{3u\frac{d^2u}{dy^2}-2\left(\frac{du}{dy}\right)^2\right\}-z^2\left\{3u\frac{d^2u}{dz^2}-2\left(\frac{du}{dz}\right)^2\right\},$$

whence

$$2lmn\,\Sigma lyz\left(3u\frac{d^2u}{dy\,dz}-2\frac{du}{dy}\frac{du}{dz}\right)$$
$$= lmn\,\Sigma(l-m-n)x^2\left\{3u\frac{d^2u}{dx^2}-2\left(\frac{du}{dx}\right)^2\right\}.$$

Now $l^2x-lmx-lnx = l^2x+m^2y+n^2z+mn(y+z)$ from the first condition, and the right-hand side becomes

$$\Sigma m^2n^2x(y+z)\left\{3u\frac{d^2u}{dx^2}-\left(\frac{du}{dx}\right)^2\right\}$$

from the second.

16216. (W. F. BEARD, M.A.)—Two similar ellipses with their axes parallel are cut by any straight line in A, B, A′, B′; a point O is taken in AD such that $OA.OB = OA'.OB'$. Prove that the locus of O is a straight line.

Solution by HENRY RIDDELL, M.E., *and others.*

Both conics will project orthogonally at the same time into circles. The locus of O is now plainly the radical axis of the two circles, and, as the property $OA.OB = OA'.OB'$ is unchanged by orthogonal projection, the locus of O on reprojection is the projection of the radical axis.

This is also quite easily seen from the ordinary geometrical property of the ellipse—the rectangles under the segments of any chords passing through a point are proportional to the squares of the diameters parallel to the same. Hence at once the locus is the line which passes through the two points of intersection (real or imaginary) of the similar and similarly placed ellipses.

16189. (T. STUART, M.A., D.Sc.)—Find a direct, non-tentative, and quick process for solving the equation $x^2 = a \pmod p$ where a is a quadratic residue of p and p is a large prime. Exhibit your method by solving the equations

$$(a)\ x^2 = -537 \pmod{6311}, \quad (b)\ x^2 = 3582 \pmod{7177},$$
$$(c)\ x^2 = 3789 \pmod{8513}.$$

Solution by Lt.-Col. ALLAN CUNNINGHAM, R.E.

The following method of solving the congruence $x^2 \equiv a \pmod p$ (a given, x sought), though certainly tentative, seems worth publishing, as it has been constantly used with success by the writer.

Add mp to a, and factorize $(a+mp)$; so that

$$a \equiv a+mp \equiv (a_1a_2\ldots a_r)\,b^2C \pmod p \quad \ldots\ldots\ldots\ldots \text{(1)},$$

where $a_1, a_2, \ldots, a_r$ are small (non-square) integers such that for each one a partition of type p or $m_rp = t_r^2 \pm a_ru_r^2$ ……(2)

can be easily effected, and C any other integer (free from squares, all the squares being included in b^2). Hence arise r congruences of type

$$a_ru_r^2 \equiv \mp t_r^2 \pmod p \quad \ldots\ldots\ldots\ldots \text{(3)}.$$

Multiplying together all the congruences (1), (3), all the non-squares $(a_1, a_2, \ldots, a_r)$ will cancel out, leaving

$$a(u_1u_2\ldots u_r)^2 \equiv \pm(bt_1t_2\ldots t_r)^2C \quad \ldots\ldots\ldots\ldots \text{(4)}.$$

As a variation on above (3), any two of the (non-squares) a_r, say a_1, a_2, may be eliminated by a single partition of type

$$p \text{ or } m_1p = a_1t_2^2 \pm a_2u_2^2, \text{ whence } a_1a_2u_2^2 \equiv \mp(a_1t_2)^2 \pmod p \ \ldots \text{(4′)}.$$

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Next, let C be treated in the same way as a was. If a new quantity C′ appears which is not readily removed by a partition of type (3), the process must be repeated until all the non-squares are eliminated (except a itself): this leaves a result of type

$$aU^2 \equiv +T^2 \quad \text{or} \quad a \equiv (T/U)^2 \pmod{p}.$$

Hence $$a \equiv [(T \pm np)/U]^2 \equiv x^2 \pmod{p},$$

the multiplier being determined so as to render the fraction integral $(= x)$; then $\pm x$ are the required solutions.

Ex. (*a*).—$x^2 \equiv -537 \pmod{p = 6311}$. Here

$$-537 = -3 \,.\, 179 \equiv -3 \,.\, 6490 \equiv -30 \,.\, 649$$
$$\equiv -30 \,.\, 6960 \equiv -2 \,.\, 29\,(60^2) \pmod{p} \quad \text{.....} \text{(A)};$$

but $p = 29 \,.\, 3^2 + 2 \,.\, 55^2$, whence $29 \,.\, 3^2 \equiv -2 \,.\, 55^2 \pmod{p}$ ..... (B).

Multiplying (A) by (B) and cancelling gives $-537 \equiv (8 \,.\, 5 \,.\, 55)^2 \equiv 2200^2$; hence $x = \pm 2200$.

Ex. (*b*).—$x^2 \equiv 3582 \pmod{p = 7177}$. Here

$$3582 = 2 \,.\, 3^2 \,.\, 199 \equiv 2 \,.\, 3^2 \,.\, 7376 \equiv 2^5 \,.\, 3^2 \,.\, 461 \pmod{p}$$
$$\equiv 2^5 \,.\, 3^2\,(-6716) \equiv -2^7 \,.\, 3^2 \,.\, 1679 \equiv -2^7 \,.\, 3^2 \,.\, 8856 \equiv -2^{10} \,.\, 3^5 \,.\, 41$$
$$\text{.....(A)};$$

but $p = 65^2 + 82 \,.\, 6^2$, whence $2 \,.\, 41 \,.\, 6^2 \equiv -65^2 \pmod{p}$ .....(B).

(A) and (B) give $3582 \equiv 2^7 \,.\, 3^3 \,.\, 65^2 = 6\,(2^3 \,.\, 3 \,.\, 65)^2$ .....(C).

But $p = 109^2 - 6 \,.\, 28^2$, whence $6 \,.\, 28^2 \equiv 109^2 \pmod{p}$ ..... (D).

(C) and (D) give $3582 \,.\, 28^2 \equiv (8 \,.\, 3 \,.\, 65 \,.\, 109)^2 \equiv (170040)^2$.

Hence $$3582 \equiv \left(\frac{42510}{7}\right)^2 \equiv \left(\frac{42510 - 3p}{7}\right)^2 \equiv \left(\frac{20979}{7}\right)^2 = 2997^2$$

and $$x = \pm 2997.$$

Ex. (*c*).—$x^2 \equiv 3789 \pmod{p = 8513}$. Here

$$3789 = 3^2 \,.\, 421 \equiv 3^2\,(-8092) \equiv -7\,(2 \,.\, 3 \,.\, 17)^2 \text{.....(A)}.$$

But $p = 55^2 + 7 \,.\, 28^2$, whence $7 \,.\, 28^2 = -55^2 \pmod{p}$ .....(B).

(A) and (B) give $3789 \,.\, 28^2 \equiv (2 \,.\, 3 \,.\, 17 \,.\, 55)^2 \equiv (2 \,.\, 2805)^2$.

Hence $$3789 \equiv \left(\frac{2805}{14}\right)^2 \equiv \left(\frac{2805 - 5p}{14}\right)^2 \equiv \left(\frac{-39760}{14}\right)^2 \equiv (-2840)^2$$

and $$x = \pm 2840.$$

16143. (Professor NEUBERG.)—On considère les hyperboles équilatères qui passent par deux points fixes A, B et dont une asymptote passe par une point fixe C. Trouver (1) le lieu des centres de ces courbes; (2) l'enveloppe des secondes asymptotes.

Solutions (I.) *by* A. M. NESBITT, M.A.; (II.) *by* Professor SANJÁNA, M.A.

(I.) The rectangular hyperbola

$$x^2 - y^2 + xy\,(m - 1/m) - (mb - c)\,(1 + m^2)\,y/m^2 = a^2$$

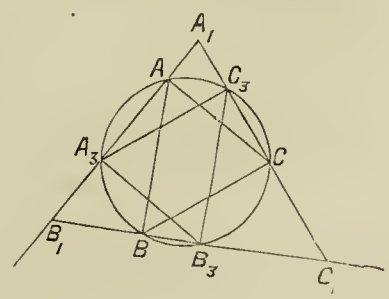
passes through the points $(\pm a, 0)$ and has for asymptotes $y - c = m\,(x - b)$ and $m^2 y + m\,(x + b) = c$. Eliminating m, we get as the equation to the locus of centre the circular cubic

$$(y - 2c)\,(x^2 + y^2) + 2bcx = y\,(b^2 - c^2),$$

which passes through the origin (middle point of AB) and through C. The envelope of the second asymptote is easily seen to be the parabola $(x + b)^2 = 4cy$. [Rest in *Reprint.*]

15874. (N. PARAMESWARA MENON.)—ABC is a given triangle; through A, A_1B_1 is drawn parallel to the perpendicular from B on AC; through B, B_1C_1 is drawn parallel to the perpendicular from C on AB; and, through C, C_1A_1 is drawn parallel to the perpendicular from A on BC. Find (i.) the area of the triangle $A_1B_1C_1$ in terms of that of the triangle ABC; (ii.) the circum-radius of the triangle $A_1B_1C_1$; (iii.) the area of the pedal triangle of $A_1B_1C_1$ in terms of that of the pedal triangle of ABC; and (iv.) show that, if A_1B_1 cut the circum-circle of ABC in A_3, and B_3, C_3 are the two other points obtained in the same way, the triangle $A_3B_3C_3$ is identically equal to the triangle ABC.

Solutions (I.) *by* R. J. WHITAKER; (II.) *by* M. V. ARUNACHALAN, M.A.



(I.) Let Δ, Δ_1 represent the areas of the triangles ABC, $A_1B_1C_1$; P, P_1 the areas of the pedal triangles; and R, R_1 the radii of the circum-circles. Now A_1B_1, B_1C_1 are perpendicular to AC, AB; therefore $B_1 = A$. Similarly $C_1 = B$ and $A_1 = C$.

(i.) $$\Delta_1 = 2R_1^2 \sin A \sin B \sin C$$
$$= 2\,\frac{R^4\,(a^2 + b^2 + c^2)^2}{a^2b^2c^2}\,\frac{abc}{8R^3}$$
$$= \frac{R\,(a^2 + b^2 + c^2)^2}{4abc} = \frac{(a^2 + b^2 + c^2)^2}{16\Delta}.$$

(ii.) Now

$$R_1 = \frac{a_1}{2\sin A_1} = \frac{c\cot A + a\operatorname{cosec} B}{2\sin C} = \frac{c\cos A\sin B + a\sin A}{2\sin A\sin B\sin C}$$

$$= \frac{a^2+bc\cos A}{4R\sin A\sin B\sin C} = \frac{a^2+b^2+c^2}{8R\sin A\sin B\sin C} = \frac{R^2(a^2+b^2+c^2)}{abc}.$$

(iii.) $P_1 = \frac{1}{2}R_1^2\sin 2A_1\sin 2B_1\sin 2C_1$ and $P = \frac{1}{2}R^2\sin 2A\sin 2B\sin 2C$;

therefore $P_1 = \frac{R_1^2}{R^2}P = \frac{R^2(a^2+b^2+c^2)^2}{a^2b^2c^2}P = \left(\frac{a^2+b^2+c^2}{4\Delta}\right)P.$

(iv.) Arc CA_3 = arc BC_3; therefore arc BC = arc A_3C_3; therefore

$$B_3 = A \quad \text{and} \quad b_3 = a, \ \ldots.$$

[Rest in *Reprint*.]

16188. (Lt.-Col. Allan Cunningham, R.E.)—Determine the sides of two right-angled triangles in integers so that the product of the hypothenuse and a side of one may be equal to the product of the hypothenuse and a side of the other.

Remarks by Professor Sanjána, M.A.

Proceeding as in Question 15934 (Mr. A. Holm, M.A.), the sides of the triangles may be taken as $l_1(m_1^2+n_1^2)$, $2l_1m_1n_1$, $l_1(m_1^2-n_1^2)$; $l_2(m_2^2+n_2^2)$, $2l_2m_2n_2$, $l_2(m_2^2-n_2^2)$. If the products of the first two are equal, then, assuming $l_1^2 = m_2^2+n_2^2$, $l_2^2 = m_1^2+n_1^2$, we have

$$m_1n_1 = m_2n_2.$$

Hence $l_1 = \lambda_2(\mu_2^2+\nu_2^2)$, $m_2 = 2\lambda_2\mu_2\nu_2$, $n_2 = \lambda_2(\mu_2^2-\nu_2^2)$;
$l_2 = \lambda_1(\mu_1^2+\nu_1^2)$, $m_1 = 2\lambda_1\mu_1\nu_1$, $n_1 = \lambda_1(\mu_1^2-\nu_1^2)$;

and thus, finally, $\lambda_1^2\mu_1\nu_1(\mu_1^2-\nu_1^2) = \lambda_2^2\mu_2\nu_2(\mu_2^2-\nu_2^2)$;

so that $[\mu_1\nu_1(\mu_1^2-\nu_1^2)]/[\mu_2\nu_2(\mu_2^2-\nu_2^2)] = \lambda_2^2/\lambda_1^2.$

We may then assume

$$\mu_1 = 2\lambda_2^2-\lambda_1^2, \quad \nu_1 = \lambda_2^2+\lambda_1^2, \quad \mu_2 = \lambda_2^2+\lambda_1^2, \quad \nu_2 = \lambda_2^2-2\lambda_1^2.$$

As Mr. Holm correctly says, the method does not furnish all solutions; and the smaller solutions are very difficult to obtain: *e.g.*, even when $\lambda_2 = 2$, $\lambda_1 = 1$, the triangles obtained are 29.37^2, 29.840, 29.1081; 37.29^2, 37.840, 37.41. The following method is practical only, though some parts of it can be easily generalized:—

I. Let one hypothenuse be a square number $N = P^2 = c^2+d^2$; the sides are $2c$, c^2-d^2. Let either of these $= mn$ (or $m'n'\delta^2$); then, if m^2-n^2 (or $m'^2\delta^2-n'^2\delta^2$) $= \square = y^2$, m and n are the hypothenuse and one side of a right-angled triangle. The original triangle and the triangle (mP, nP, yP) form the solution. *Exs.*: 289, 240, 161; $240 = 20.12 = 16^2-4^2 = 4^4-2^4$; hence 4^2+2^2, 4^2-2^2, 2.4.2 is the second triangle, and, enlarging, we get 340, 204, 272. Similarly, from 1681, 720, 1519 we get $720 = 36(5.4)$, so that $30^2-24^2 = 18^2$; hence 30.41, 24.41, 18.41 is the second triangle.

II. Let one hypothenuse be $P^2+Q^2 = l^2(c^2+d^2)$; let 2PQ or P^2-Q^2 be a perfect square δ^2; then, if c^2-d^2 or $2cd$ is also a perfect square ϵ^2, the original triangle enlarged δ times, and the triangle $(c^2+d^2, 2cd, c^2-d^2)$ enlarged $l\epsilon$ times will furnish solutions. Thus, from 1025, 64, 1023 and 41, 40, 9 we get 3075, 192, 3069 and 1640, 360, 1600. If 2PQ or P^2-Q^2 be of the form $m\delta^2$, and m, c^2+d^2 form the hypothenuse and one side, the triangles can be similarly obtained. Thus, from 125 $(= 5.5^2)$, 117 $(= 13.3^2)$, 44, we get 5, 13, 12, and, enlarging, 195, 75, 180 is the second triangle. So also from 1625, 1184, 1113 we can deduce 1850, 1040, 1530.

III. When the hypothenuse does not contain a square factor it must be of the form $P^2+Q^2 = (a^2+b^2)(c^2+d^2)$. In this case let P^2-Q^2 or 2PQ be of the form $m\delta^2$. If from m, a^2+b^2, c^2+d^2 or these multiplied by square factors we can get a right-angled triangle, the Question is solved. Thus, from 221 (13.17), 171 (9.19), 140, we get 13.35, 19.17, which with 36 form a right-angled triangle; hence the following solution is obtained:—

1105, 855, 700; 975, 960, 108.

The following Solution is due to the Proposer:—

Let (a, b, c), (A, B, C) be the sides of the two triangles, so that

$$c^2 = a^2+b^2, \quad C^2 = A^2+B^2 \quad \ldots\ldots\ldots\ldots(1).$$

The general solution of these in integers are known to be expressible in terms of the arbitrary integers (t, u), (T, U)

$$a = t^2-u^2, \quad b = 2tu, \quad c = t^2+u^2 \quad \ldots\ldots\ldots\ldots(2a);$$
$$A = T^2-U^2, \quad B = 2TU, \quad C = T^2+U^2 \quad \ldots\ldots\ldots\ldots(2b).$$

And the given relation between the triangle requires either

$$\text{(i.) } bc = BC, \quad \text{(ii.) } ac = AC \ldots\ldots\ldots\ldots(3).$$

Case i.—$bc = BC$ gives $tu(t^2+u^2) = TU(T^2+U^2)$ .....(4).

Euler has given (*Op. Arithm.*, p. 289, *et seq.*) the general solution of the latter in terms of two new arbitraries (f, g),

$$t = g(f^2+g^2)(-f^4+18f^2g^2-g^4), \quad u = 2f(f^6+10f^4g^2+f^4g^2+4g^6) \ldots(5a),$$
$$T = 2g(4f^6+f^4g^2+10f^2g^4+g^6), \quad U = f(f^2+g^2)(-f^4+18f^2g^2-g^4)\ldots(5b).$$

Even small values of f, g yield high values of t, u, T, U; but in many cases these contain a common factor which may be removed, giving effectively lower values of t, u, T, U. Euler shows that the solutions exist in conjugate pairs, such that, if (t, u, T, U) be a solution, then (t', u', T', U'), given by

$$t' = (t-u)+(T-U), \quad u' = (t-u)\sim(T-U),$$
$$T' = (t+u)+(T+U), \quad U' = (t+u)+(T+U),$$

are also a solution. Hence the triangle solutions also exist in conjugate pairs. Euler's lowest solutions are the conjugates

$$(t, u;\ T, U) = (146, 12;\ 96, 37);\ (t', u';\ T', U') = (291, 25;\ 193, 75).$$

These lead to the conjugate pairs of triangles by equations (2*a*), (2*b*),

$$\left.\begin{aligned}(a, b, c) &= (7.19.59,\ 64.3.37,\ 5.29.73)\\ (A, B, C) &= (4.59.79,\ 16.3.73,\ 4.5.29.37)\end{aligned}\right\},$$
$$\left.\begin{aligned}(a', b', c') &= (8.59.67,\ 2.3.25.193,\ 2.3.17.97)\\ (A', B', C') &= (8.7.19.79,\ 2.3.25.97,\ c = 2.13.17.1937)\end{aligned}\right\}.$$

The common factor 2 may be cancelled from the latter set. The next solutions are of course in much higher numbers.

Case ii.—$ac = AC$ gives $t^4-u^4 = T^4-U^4$.....(6).

Euler has given (*loc. cit.*) solutions for this form also, and Desboves has also given solutions in a general form [but longer than equations (5*a*), (5*b*) above], in his paper "Sur la résolution en nombres entiers ou complexes de l'équation $U^n \pm V^n = S^n+W^n$," Paris, 1880; but, as they lead to the same triangles as in Case i., this case need not be developed.

16197. (L. Isserlis, B.A.)—A straight line moves so as to cut three fixed conics in six points forming an involution. Find the locus of the centre of the involution.

Solution by S. T. Shovelton.

Let the three conics be

$$\phi_1(x, y) \equiv a_1x^2+2h_1xy+b_1y^2+2f_1y+2g_1x+c_1 = 0,$$
$$\phi_2(x, y) = 0,$$
$$\phi_3(x, y) = 0,$$

and let (α, β) be the centre of the involution formed on the line

$$(x-\alpha)/l = (y-\beta)/m.$$

If $(\alpha+lr, \beta+mr)$ is on the first conic, we have

$$r_1r_2 = [\phi_1(\alpha, \beta)]/(a_1l^2+2h_1lm+b_1m^2),$$

which is therefore equal to

$$[\phi_2(\alpha, \beta)]/(a_2l^2+2h_2lm+b_2m^2) = [\phi_3(\alpha, \beta)]/(a_3l^2+2h_3lm+b_3m^2).$$

Let $\Delta = \begin{vmatrix} a_1 & h_1 & b_1 \\ a_2 & h_2 & b_2 \\ a_3 & h_3 & b_3 \end{vmatrix}$, and let the first minors be denoted by A_1, H_1, B_1, ... Then the fractions are equal to

$$\frac{A_1\phi_1+A_2\phi_2+A_3\phi_3}{\Delta l^2} = \frac{H_1\phi_1+H_2\phi_2+H_3\phi_3}{2\Delta lm} = \frac{B_1\phi_1+B_2\phi_2+B_3\phi_3}{\Delta m^2};$$

therefore the locus is

$$(H_1\phi_1+H_2\phi_2+H_3\phi_3)^2 = 4(A_1\phi_1+A_2\phi_2+A_3\phi_3)(B_1\phi_1+B_2\phi_2+B_3\phi_3),$$

which represents a cubic curve, since the terms of the second degree in the three brackets are $2\Delta xy$, Δx^2, Δy^2 respectively.

QUESTIONS FOR SOLUTION.

16237. (T. Stuart, M.A., D.Sc.)—Solve the partial differential equation

$$q^2r+4pqs+p^2t+p^2q^2(rt-s^2) = a^2.$$

16238. (*Communicated by* S. Narayana Aiyar.)—If r is less than a, show that

$$(1)\ \int_0^\pi \frac{e^{mr\cos\theta}}{(a^2-2ar\cos\theta+r^2)^{\frac{1}{2}n}}\cos\left(mr\sin\theta+n\tan^{-1}\frac{r\sin\theta}{a-r\cos\theta}\right)d\theta = \pi a^{-n}.$$

$$(2)\ \int_0^\pi \frac{e^{mr\cos\theta}}{(a^2-2ar\cos\theta+r^2)^{\frac{1}{2}n}}\cos\left(mr\sin\theta-n\tan^{-1}\frac{r\sin\theta}{a-r\cos\theta}\right)d\theta$$
$$= \pi a^{-n}\left\{1+\sum_{p=1}^{p=\infty}\frac{(n+p-1)!}{p!\,p!\,(n-1)!}\left(\frac{m}{a}\right)^p r^{2p}\right\}.$$

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16239. (H. BATEMAN, B.A.)—If

$$\kappa(s,t) = \int_0^1 f(s,x)\, g(x,t)\, dx,$$

where $f(s,x)$ and $g(x,t)$ are real continuous symmetrical functions such that the double integrals

$$\int_0^1\int_0^1 f(s,x)\, a(s)\, a(x)\, ds\, dx, \quad \int_0^1\int_0^1 g(s,x)\, b(s)\, b(x)\, ds\, dx$$

are essentially positive, $a(s)$ and $b(s)$ being arbitrary real continuous functions, then the values of λ for which the integral equation

$$\phi(s) = \lambda \int_0^1 \kappa(s,t)\, \phi(t)\, dt$$

can be satisfied are all real and positive.

16240. (S. C. BAGCHI, B.A., LL.B.) — The transformation $x = f_1(\xi,\eta,\zeta)$, $y = f_2(\xi,\eta,\zeta)$, $z = f_3(\xi,\eta,\zeta)$ converts the surfaces $\phi_1(x,y,z) = 0$, $\phi_2(x,y,z) = 0$ into $\psi_1(\xi,\eta,\zeta) = 0$, $\psi_2(\xi,\eta,\zeta) = 0$ respectively. If the surfaces $f_1(\xi,\eta,\zeta) = k_1$, $f_2(\xi,\eta,\zeta) = k_2$, $f_3(\xi,\eta,\zeta) = k_3$ form an orthogonal system through a point such that

$$\Sigma\,(\partial f_1/\partial\xi)^2 = \Sigma\,(\partial f_2/\partial\xi)^2 = \Sigma\,(\partial f_3/\partial\xi)^2,$$

then the angle of intersection of $\phi_1 = 0$ and $\phi_2 = 0$ is an invariant. A particular case is inversion in space. A similar result obtains in two dimensions.

16241. (SARADAKANTA GANGULI, M.A.) — If the Pythagorean definition of numbers in musical progression be extended to any numbers, positive or negative, integral or fractional, rational or irrational, find a series of numbers such that, if any four consecutive numbers of the series be taken, they will be in musical progression. Show that there are only two such principal series, and that all other series in musical progression are deducible from them.

16242. (Lt.-Col. ALLAN CUNNINGHAM, R.E.)—Factorize completely (into prime factors) $N = (3^{54} + 2^{54})$.

16243. (Professor SANJÁNA, M.A. *Suggested by* Question 16188, Lt.-Col. Allan Cunningham, R.E.)—Find a square number $P^2 = c^2 + d$ such that $2cd$ or $c^2 - d^2$ is of the form $x^4 - y^4$ or $2xy(x^2 + y^2)$.

16244. (R. F. DAVIS, M.A.)—If x, y are positive quantities, prove that each of them is less than $(x^2 + xy + y^2)^2/[4xy(x+y)]$.

16245. (Professor NANSON.)—Solve the equations

$$a(mz - ny)(m'z - n'y) = b(nx - lz)(n'x - l'z) = c(ly - mx)(l'y - m'x).$$

16246. (Professor LANGHORNE ORCHARD, M.A., B.Sc.)—A carpenter has a plank of wood 13 feet 4 inches long, 1 foot wide, 1 inch thick. Show how from it he can construct five boxes in descending order of magnitude, such that the smaller just fit into the larger.

16247. (A. M. NESBITT, M.A.)—Find the conditions that the three lines $(x - \alpha_r)/l_r = (y - \beta_r)/m_r = (z - \gamma_r)/n_r$ $(r = 1, 2, 3)$ shall lie on a hyperboloid of revolution.

16248. (W. J. DOBBS, M.A.)—The edges of a tetrahedron are of lengths a, a, b, b, c, c, opposite edges being equal. Show that its volume is $\frac{1}{12}\sqrt{[2(b^2+c^2-a^2)(c^2+a^2-b^2)(a^2+b^2-c^2)]}$.

16249. (W. J. GREENSTREET, M.A.)—OQ is the perpendicular from the origin O to the tangent to a curve at P. If C is the centre of curvature at P, and D the foot of the perpendicular from C to OP, E, M the feet of the perpendiculars from D, O to CP, then shall QM and OE intersect in the centre of curvature at Q.

16250. (C. E. YOUNGMAN, M.A.)—In a parabola the circle on a focal radius SP as diameter cuts the curve again at A, B, C. Prove that the distance of the foot of the directrix from BC, CA, AB, or from the pedal line of S in ABC is equal to the semi-latus rectum.

16251. (W. F. BEARD, M.A.)—If a system of conics have a common chord, then the polars of any point on the common chord, with regard to the conics, are concurrent.

16252. (JAMES BLAIKIE, M.A.)—If a, b, c are the sides of a triangle ABC; p, q, r the distance of a point D from A, B, C, prove that A, B, C, D are coplanar when the following relation holds good :—

$$\Sigma\,[(a^2p^2 + b^2c^2)(q^2 + r^2)] = \Sigma\,[a^2p^2(a^2 + p^2)] + \Sigma\, a^2q^2r^2 + a^2b^2c^2.$$

Show, both geometrically and algebraically, that this condition is identical with

$$\Sigma\,[(a^2p^2 + q^2r^2)(b^2 + c^2)] = \Sigma\,[a^2p^2(a^2 + p^2)] + \Sigma\, a^2q^2r^2 + a^2b^2c^2.$$

16253. (C. M. VIJENDRA RAO.)—To draw a straight line cutting any two sides of a given triangle such that the intercept of the former between the latter may be equal to each of the intercepts of the latter between the base and the required straight line.

16254. (*Communicated by* A. THOMSON.) — K is the symmedian point of a harmonic polygon whose vertices are 1, 2, 3, ..., n. If

$t_1, t_2, \ldots, t_n$ be the lengths of the tangents from any point on the circum-circle of the polygon to the circum-circles of the triangles K12, K23, ..., show that $t_1^2 + t_2^2 + \ldots + t_n^2 = 0$.

OLD QUESTIONS AS YET UNSOLVED (IN OUR COLUMNS).

10422. (Artemas Martin, LL.D.)—Square B, side b, is laid on square A, side a. Find the probability that the centre (intersection of diagonals) of square B is on square A.

10555. (Professor Haughton, F.R.S.)—If chemical atoms obey the Newtonian Law of Gravitation, of the inverse square, and have special coefficients of their own, show that a molecule formed of three atoms α, β, γ, with attraction coefficients $(\beta, \gamma, \ldots, \lambda)$, $(\gamma, \alpha, \ldots, \mu)$, $(\alpha, \beta, \ldots, \nu)$, may be represented by the steady motion of a triangle with α, β, γ placed at its angles revolving round the common centre of gravity of α, β, γ. (1) Find the rotation and (2) show that the sides of the triangle are proportional to $\sqrt[3]{\lambda}$, $\sqrt[3]{\mu}$, $\sqrt[3]{\nu}$.

10614. (Rev. H. London, M.A.)—In space of n dimensions $n+1$ flats of $n-1$ dimensions equidistant from the origin repel according to the inverse n-th power of the distance. Prove that a particle at the origin will be in equilibrium.

10775. (J. L. Mackenzie, B.A., B.Sc.)—Two circles cut a given circular cubic in A, B, C, D and A, B, E, F respectively; CE cuts the cubic in P, PD in Q, QF in R. Prove that DR touches the cubic at D.

10913. (N'importe.)—Solve the equation

$$\frac{2a-b-c}{x+a-b-c} + \frac{2b-c-a}{x+b-c-a} + \frac{2c-a-b}{x+c-a-b} = 4.$$

11215. (Professor Lemoine.)—Sur les perpendiculaires MA′, MB′, MC′ abaissées d'un point M sur les côtés du triangle ABC on prend respectivement les points A″, B″, C″ tels que

$$MA'.MA'' = MB'.MB'' = MC'.MC'' = \rho^2.$$

Quel que soit ρ, le triangle A″B″C″ est perspectif avec ABC et le centre de perspective est sur l'hyperbole équilatère ABCM.

NOTICE TO CORRESPONDENTS.

It is requested that all Mathematical communications should be sent to the Mathematical Editor,

Miss Constance I. Marks, B.A., 10 Matheson Road, West Kensington, W.

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THE LONDON MATHEMATICAL SOCIETY.

Thursday, June 13th, 1907.—Professor W. Burnside, President, in the chair.

Mr. J. E. Littlewood and Dr. H. A. Sadow Pittand were elected members.

Dr. Sadow Pittand was admitted into the Society.

The President referred to the loss sustained by the Society through the death of Dr. E. J. Routh, who was a member of the Society from the time of its foundation, and a resolution of condolence with the family was passed.

The following mathematicians were elected Honorary Members of the Society:—Professors Guido Castelnuovo, of Rome; George William Hill, of New York; Camille Jordan, of Paris; Vito Volterra, of Rome.

The following papers were communicated:—

"On the Number of Representations of a Number as a Sum of $2r$ Squares, where $2r$ does not exceed 18," by Dr. J. W. L. Glaisher.

"An Extension of Eisenstein's Law of Reciprocity," by Mr. A. E. Western.

"Note on a Special Set of Classes of Partial Differential Equations of the Second Order," by Prof. A. R. Forsyth.

"Various Extensions of Abel's Lemma," by Prof. T. J. I'A. Bromwich.

"The Arithmetical Nature of the Coefficients of Groups of Linear Substitutions of Finite Order" (Third Paper), by Prof. W. Burnside.

"The Invariants of the Quintic," by Dr. H. F. Baker.

Informal communications were made as follows:—

"On certain Singular Points of Surfaces," by Mr. A. B. Basset.

"The Minimum Necessary Postulates as to a Function to be defined as Analytic over a Region," by Prof. E. B. Elliott.

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The course includes attendance at the University Lectures on Education, practical experience in Schools of different types, and special opportunities of becoming acquainted with Educational methods.

Prospectus and further particulars from the Principal, Miss M. R. WALKER, 5 Melville Street, Edinburgh.

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The MICHAELMAS TERM begins on October 3rd, 1907. The College prepares Students for the London Degrees in Science and Arts, and for certain of the Oxford Honour Examinations. Ten ENTRANCE SCHOLARSHIPS, from £50 to £60 a year, and several Bursaries of not more than £30, tenable for three years, will be offered for competition in July, 1908.

For further particulars apply to the SECRETARY, Royal Holloway College, Englefield Green, Surrey.

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By Order,
G. W. RUNDALL,
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(UNIVERSITY OF LONDON.)

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A Handbook forwarded on application.

ST. MARY'S HOSPITAL MEDICAL SCHOOL, PADDINGTON, W.

(UNIVERSITY OF LONDON.)

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CHARING CROSS HOSPITAL MEDICAL COLLEGE.

(UNIVERSITY OF LONDON.)

The WINTER SESSION, 1907-8, will be opened on Tuesday, October 1st, by the Annual Distribution of Prizes and an Address to the Students in the Out-Patients' Hall at the Hospital at 4 p.m., by the Right Hon. THE EARL OF KILMOREY, K.P.

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The SAUNDERS SCHOLARSHIP, of the value of £20.
The STORER-BENNETT RESEARCH SCHOLARSHIP, of the value of £50.
The ALFRED WOODHOUSE SCHOLARSHIP, of £35.
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THE DEAN.

UNIVERSITY COLLEGE HOSPITAL MEDICAL SCHOOL.

(UNIVERSITY OF LONDON.)

The Session will be opened on Wednesday, October 2nd, at 4 p.m., when the Dean's report on the progress of the Medical School will be read.
The Examinations for the Entrance Exhibitions will begin on September 24th, 1907.
The Dean and Vice-Dean will attend on Tuesday, October 1st, and Wednesday, October 2nd, from 2 to 4 p.m., for the admission of Students.
Students desiring to enter the School can obtain Prospectuses and full information on application to the DEAN, University College Hospital Medical School, Gower Street, W.C.

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Secretary of Senatus: Professor Sir LUDOVIC J. GRANT, Bart., B.A., LL.D.

The ***Winter Session*** begins about the middle of October, and closes about the end of March; the ***Summer Session*** extends from the beginning of May to the end of July.

The University embraces ***Six Faculties,*** viz.: ***Arts, Science, Divinity, Law, Medicine and Surgery,*** and ***Music,*** in all of which full instruction is given and Degrees are conferred. There are many different avenues to the ***Arts Degrees,*** the graduation subjects embracing English, History, Modern Languages, Science, &c., besides Ancient Languages, Philosophy, Mathematics, &c.; and it has been shown by successes of Edinburgh students in the Civil Service Examinations that it is possible to combine study for Degrees in Arts, Science, or Law with preparation for this and other Special Examinations. In addition to the Ordinary and Honours Degrees in Arts, the Higher Degrees of D.Litt., D.Phil., and D.Sc. are conferred. Education in Military subjects is given in connexion with the Scheme of allotment of Army Commissions to Graduates of the University. Degrees in ***Science*** (B.Sc. and D.Sc.) may be taken in ***Pure Science, Engineering,*** and in ***Public Health,*** and the Degree of B.Sc. in ***Agriculture*** and in ***Forestry.*** There are fully equipped Science Laboratories, and other necessary appliances, in all these Departments. The curriculum in ***Divinity*** affords a thorough training in Theological subjects, and in Hebrew, Arabic, and Syriac. The Degree of Bachelor of Divinity (B.D.) is conferred. The ***Law*** Faculty, besides furnishing the professional equipment necessary for those intending to practise in Scotland, contains Chairs in Jurisprudence and Public International Law, Constitutional Law and History, Roman Law, and Political Economy, and Lectureships in International Private Law and Administrative Law, and is thus adapted for students preparing for the Civil Service Examinations, and for legal, political, and administrative appointments generally. The Degrees of Bachelor of Laws (LL.B.) and Bachelor of Law (B.L.) are conferred. The Faculty of ***Medicine*** has a full curriculum in Medicine and Surgery, and is equipped with very extensive Laboratories and all other necessary appliances for Practical Teaching. Ample facilities are afforded for Clinical Instruction at the Royal Infirmary, Maternity Hospital, Royal Hospital for Sick Children, Hospital for Infectious Diseases, and Royal Asylum for the Insane. Four Degrees in Medicine and Surgery are conferred by the University, viz.: Bachelor of Medicine (M.B.), Bachelor of Surgery (Ch.B.), Doctor of Medicine (M.D.), and Master of Surgery (Ch.M.), and these Degrees qualify for practice throughout His Majesty's dominions, and for admission to the Naval, Military, and other Public Medical Services in the United Kingdom. A ***Diploma in Tropical Medicine and Hygiene*** (D.T.M. & H.) is conferred on Graduates in Medicine of the University, and a University ***Certificate in Tropical Diseases*** is also conferred on qualified Medical Practitioners who have attended Courses in the University on practical Bacteriology and Tropical Diseases. In ***Music*** there is a full course of study for graduation, and the Degrees of Mus.B. and Mus.D. are conferred.

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Information regarding Matriculation, the Curricula of Study for Degrees, &c., the Examinations for Fellowships, Scholarships, &c., may be obtained from the DEANS OF THE FACULTIES, or from the CLERK OF SENATUS; and full details are given in the University Calendar, published by JAMES THIN, 35 South Bridge, Edinburgh—price 3s. 4d. by post. The Preliminary and Degree Examination papers in each of the Faculties are also published by Mr. JAMES THIN, viz.—Arts and Science Preliminary papers and Bursary papers, 1s.; Medical Preliminary papers, 6d.; Degree papers: Arts, 1s.; Science, 9d.; Divinity, Law, Medicine, and Music, 6d. each.

August, 1907. By authority of the Senatus, L. J. GRANT, *Secretary of Senatus.*

UNIVERSITY OF LONDON.

UNIVERSITY COLLEGE.

Provost—T. GREGORY FOSTER, B.A., Ph.D.

FACULTIES OF ARTS AND LAWS AND OF SCIENCE, AND THE SCHOOLS OF ARCHITECTURE AND ENGINEERING.

The Session 1907-8 will begin on Tuesday, October 1st. The Provost and Deans will attend on Monday, September 30th, and Tuesday, October 1st, from 10 a.m. to 1 p.m., for the admission of Students.

The Department of Fine Arts (Slade School) will open on Monday, October 7th.

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The Educational Times.

New Regulations.

THE new Regulations for Training Colleges and Secondary Schools have naturally occasioned considerable stir. The deputation to the Prime Minister, headed by the Archbishop of Canterbury, has been considered important enough to be assigned nearly a page of the *Times*, his Grace's speech occupying two full columns, and the reply of the President of the Board of Education, with a heckling beyond parallel on such an occasion, claiming a still larger space. There is no sense in bandying ugly words over the questions raised: it is only too easy a mode of relief to the feelings of interested parties on the one side and on the other; but it has this fatal disadvantage, that it not only fails to solve such difficulties as there are, but blinds the disputants to the facts that must be recognized before any solution can be reached. The deputation, of course, did not make this absurd mistake, nor did the Ministers; both sides have to suffer from the ill judged ardour of supporters. What strikes us as singular in the report of the proceedings is that there should have been manifested so much difficulty in understanding the several positions of parties. Such antagonism as arises from the historical development of the situation is readily intelligible. What is less easily comprehended is the apparent lack of grasp of the facts of the situation and their due bearings. Yet these must be squarely faced in order to attain a just solution. After several hours' strenuous discussion, the Archbishop declared that, "if he were the head of a training college, he would not have the least idea what he was to do"; and, as almost his last word, "I am surrounded here by the heads of training colleges who literally do not know what to do on August 1." Such a result is not promising.

The essential point, however, is unmistakable. The new Regulations lay down stringent "conditions as to the freedom of the school [or training college or hostel] from denominational restrictions and requirements in respect of government, teaching staff, and religious instruction, and as to its being placed under local popular control." While prohibiting the teaching of any catechism or formulary distinctive of any particular religious denomination, they allow an exception "in cases where the parent or guardian of any scholar requests the governors in writing to provide for the scholar religious instruction in the doctrines, catechism, or formularies distinctive of any particular denomination"—that is to say, "if the governors think fit, and if the instrument under which the school [or college or hostel] is governed requires or does not prohibit the giving of such instruction in the school [or college or hostel]"; but the governors are to "provide such instruction out of funds other than grants made by the Board of Education or by any Local Authority." With regard to the admission of students to a training college or hostel, it is laid down "that in no circumstances may the application of a candidate be rejected on the ground of religious faith or by reason of his refusal to undertake to attend or abstain from attending any place of religious worship, or any religious observance, or instruction in religious subjects in the college or elsewhere, nor on the ground of social antecedents or the like"; and, "if the grounds on which a candidate has been rejected are in the view of the Board unreasonable, the college or hostel concerned will be liable to a reduction in its total grant for the year not exceeding £100 on the first occasion, and to removal from the list of recognized colleges or hostels on the second occasion." The result is that the institutions are thrown open on a perfectly undenominational basis, and that, while denominational teaching is still permitted under conditions, it must henceforth be paid for out of denominational funds, and not out of public funds, Imperial or local.

The deputation dwelt but little upon the position of secondary schools. The Bishop of Oxford and Mr. Butcher, M.P., foresaw danger: the one anticipating "serious harm," and the other fearing that the new Regulations "for the first time would import into our secondary schools the religious controversy that had raged in the elementary schools." The Archbishop, indeed, spoke of "the vital importance" of the question as regards secondary schools, but thought it "a little more necessary" to set forth the difficulties as to training colleges and hostels; and, in fact, almost the whole pressure of the argument was placed on these. It is common ground that religious education should form part of the national education. The Archbishop laid special stress on the necessity for training students to impart religious teaching—"the most difficult part of all their work"—and on "the religious atmosphere"; and he feared that the new Regulations, operating in conjunction with the increasing

number of "secular or non-religious day training colleges," would tend to discourage or crush out "the religious side which we believe ought to attach to the teacher's qualifications." It is to be noted that he emphasized the sense in which he used the word "religion" as "the large sense of the word." The question thus raised is plainly an important and most difficult one; and it is only partially met by the powers of religious teaching left to the colleges, while the pressure on Mr. M'Kenna from the constituencies is an antagonistic force, and no help to an answer that would be acceptable to Churchmen.

Again, the Archbishop laid stress on the Church's expenditure of money on institutions of a national character, mentioning £210,000 in the past dozen years. He has been reminded of the smallness of this contribution in comparison with the grants of public money—and rightly; but still the question remains whether the investments of Churchmen, as well as the purposes of the institutions, are not essentially endangered or impaired. The argument of "unworkableness" need not be considered, in view of the obvious sense of the regulation on which it was based, and of Mr. M'Kenna's clear and repeated explanation. The tone of the Ministers forbids any great hope of modification, especially as it is imperatively in harmony with their marching orders. The religious strife, it is to be feared, will continue to embroil the educational system, with more and more imminent risk of what neither of the parties, nor the country generally, wants to see—the secular solution.

NOTES.

A Roman Catholic deputation to the Prime Minister, the Earl of Crewe, and Mr. M'Kenna followed on the heels of the Church deputation (July 24). Their case followed mainly the lines of their predecessors, with not very material differences, and the burden of their complaint was not less heavy. Archbishop Bourne said they viewed with serious anxiety the proposal to introduce the conscience clause into the training colleges. The colleges had been built by Catholics for the admission of Catholic students; and the forcible intrusion of non-Catholic students would destroy the denominational character of the colleges. They also protested against the preference made in the grants to those who were content with undenominational training. The Archbishop was strongly supported by the Duke of Norfolk and Mr. John Redmond. Mr. M'Kenna again placed emphasis upon the fact "that the annual maintenance of these colleges was, to a great extent—indeed, an overwhelming extent—met out of public funds." But neither Mr. M'Kenna's explanations nor the Prime Minister's suggestion that "a little mixture of the students of another way of thinking with their own might do good for all of them" gave satisfaction to the complainants. In any case, it does not seem likely that the Roman Catholic colleges will be overrun by Protestant invaders. The principle, however, remains unaffected.

Dr. Macnamara writes to the *Times* on the subject of the training colleges. He points out that some 4,300 of the 5,000 residential places open to King's scholars and others that pass an equivalent examination are reserved for such as are willing to subscribe to a pretty rigid denominational test. He also tackles the argument from expenditure:

> Take the proportion of subscriptions to the whole income of the Church colleges for the last ten years. In 1895-6 it represented 8·3 per cent. of the income. That percentage has come steadily down until last year voluntary subscriptions represented 4·9 per cent. of the whole income of the Church colleges. Take a couple of individual cases. The last published balance sheet of the Cheltenham Diocesan Training College for Men shows total receipts of £7,938, of which £51 came from voluntary sources. The Truro Diocesan College for Women shows a total income for the year of £2,599, with £129 derived from voluntary subscriptions. Is the proposition this then: that because the Church partly built these colleges fifty or sixty years ago it is for ever to put a ring-fence around places, now at any rate, and for a long time past, almost entirely maintained from Government grants and students' fees? Can Mr. Balfour defend the proposition?

Mr. Balfour will take care of himself. Dr. Macnamara looks at one side only. The simple question is whether, in view of the history of the training colleges, the new Regulations treat them justly. They say they expended their money, whatever the percentage, on very different conditions from those that are now imposed on them.

The inadequacy of training college accommodation is felt to be a very pressing problem, and the Local Education Authorities naturally think twice and thrice before proceeding to establish such colleges of their own, even though they be burdened with only a quarter of the cost. The question has been an acute one for a long time: for example, at Sunderland. The Board of Education, however, have intimated that the following Authorities propose to establish training colleges:—Durham County, Notts and Derby Counties, Yorks (West Riding), Glamorgan County (at Pontypridd), Monmouth County (at Caerleon); and Manchester, Leicester, Portsmouth, Sunderland, Dewsbury, and Dudley County Boroughs. Owing largely to the fact that thirty-two out of thirty-eight of the Ilford Education Authority's teachers who qualified for college training by passing the recent Preliminary Certificate Examination have been unable to secure places at colleges, the Essex County Authority have decided to establish Certificate classes at the Ilford Secondary School, pending the provision of a proposed training college for the County of Essex. We understand that not half the number of teachers required a couple of years hence are yet in sight, and that there is no room for even half of those that are qualified and anxious to enter.

The other day the Bishop of Birmingham, in the House of Lords, raised the question of a new Royal Commission to inquire into "the endowment, government, administration, and teaching of the Universities of Oxford and Cambridge." Almost a generation has passed since the last Commission reported (1877), and the older Universities are experiencing "difficulties in adapting themselves to modern conditions." Both of them are appealing for very large sums of money, and people reasonably ask themselves whether the money they have might not go a great deal farther than it does if they were reconstituted on principles according better with modern developments. The Government are not prepared at the moment to appoint a Commission; but, while leaving a space for efforts at reform from within, they are evidently taking notes for action in the not very distant future if such efforts fail to show adequate results. There need be no question of destroying any useful characteristics of the

Universities: there is plenty of scope for reform without touching their distinctive features.

Some of the more active and leading members of Oxford University have recently discussed in the press various chief aspects of necessary reform, and the Bishop of Birmingham's action has rather taken them aback. However, there appeared in the *Times*, in consequence of the Bishop's question, a short letter signed by more than a dozen of distinguished Oxford names, setting forth main points on which reform is necessary, in the opinion not only of younger graduates, but also of many senior members of the University. They maintain:

1. That the constitution and machinery of Oxford, both legislative and executive, need revision.
2. That the relations between the University and its colleges, both constitutional and financial, require modification.
3. That a central direction of our studies is required, enabling the Faculties to have the authority assigned to them in other seats of learning.
4. That the studies of the University are themselves too narrow in scope and that fresh endowments of various branches of study are necessary, and especially that a greater encouragement should be given to research, which at Oxford is probably to a larger extent divorced from teaching than in any other great University.

These are but main points: the writers recognize that they are "not by any means the only matters on which inquiry should be made." "Attempts to reform from within," they say, "have again and again proved abortive owing to our present constitution, which can only be modified by legislation. We therefore consider that either a fresh Commission, or, if that suffices, legislation by the King in Council, as contemplated by the last Commission, are the only practical ways of carrying out the necessary changes. Term being over, Oxford is at present almost empty, and the signatures appended to this statement must for this reason be taken as very imperfectly representing the number of those who share the views above expressed."

The two-hundredth anniversary of the Union of Scotland and England has prompted Mr. John S. Samuel, F.R.S.E., to reflect upon "the gains and losses that have accrued to both countries" in consequence, and has thus led him to consider the importance of Scottish history as a scientific study and its place in the curriculum of Scottish schools. "The main purpose of the present paper," he says, "is to demonstrate that the defective nature of the current historical text-books is the principal cause of the unsatisfactory manner in which national history is being taught in our schools, and the serious loss to our country that results." Among contributory causes is "the lack of incentives or even facilities in our Scottish Universities for the study of Scottish history: only in one of our Universities is the teaching of Scottish history a separate subject." It is, indeed, rather painful to note the points of his criticism of a good many school text-books of history; and even the publication of a purified "Scottish edition" is not satisfactory if the unpurified edition remains current outwith Scotland. As we have seen already, however, official action has been taken to assist private effort at some measure of redress. But it takes a long time for experts to determine the true course of events; and it takes very much longer time to get compilers to attend to the expert results. England has a grievance here, as well as Scotland.

SUMMARY OF THE MONTH.

The offer of nomination for appointment by the Crown on the governing body of the Imperial College of Science and Technology (we are officially informed) has been accepted by the Right Hon. the Earl of Crewe, Lord President of the Council; the Right Hon. Gerald W. Balfour; the Right Hon. Sir Francis Mowatt, G.C.B., I.S.O.; Sir Julius C. Wernher, Bart.; Sir William H. White, K.C.B., F.R.S.; and Dr. MacAlister, Principal of the University of Glasgow. The other persons nominated as first members of the governing body are:—By the President of the Board of Education: the Right Hon. A. H. D. Acland; Mr. F. G. Ogilvie, C.B., a Principal Assistant Secretary of the Board of Education; Mr. J. C. G. Sykes, an Assistant Secretary of the Board; and Dr. R. T. Glazebrook, F.R.S., Director of the National Physical Laboratory. By the University of London: Sir E. H. Busk, Past Vice-Chancellor of the University; Prof. Capper; Prof. Farmer, F.R.S.; Sir Henry E. Roscoe, F.R.S.; and Sir A. W. Rücker, Principal of the University. By the London County Council: Mr. A. A. Allen, M.P.; Mr. H. Percy Harris, Chairman of the Council; Sir C. Kinloch-Cooke; Mr. R. A. Robinson; and Mr. J. T. Taylor, I.S.O. By the City and Guilds of London Institute: the Right Hon. the Earl of Halsbury, F.R.S., Chairman of the Council of the Institute; Sir J. Wolfe-Barry, K.C.B., F.R.S.; Sir Owen Roberts, Clerk to the Clothworkers' Company; Sir Walter S. Prideaux, Clerk to the Goldsmiths' Company; and Sir John Watney, Hon. Secretary of the Institute. By the Royal Commissioners for the Exhibition of 1851: Viscount Esher, G.C.V.O., K.C.B., and Lieut.-Colonel Sir Arthur Bigge, G.C.V.O., K.C.B., K.C.S.I., K.C.M.G., I.S.O. By the Royal Society: Sir Archibald Geikie, F.R.S. By the Professorial Staff: Prof. Tilden, F.R.S., Prof. Gowland, and Prof. Dalby. By the Institution of Civil Engineers: Sir Alex. B. W. Kennedy, F.R.S., President of the Institution. By the Institution of Mechanical Engineers: Mr. T. Hurry Riches, President of the Institution. By the Institution of Electrical Engineers: Mr. R. Kaye Gray, Past President of the Institution. By the Iron and Steel Institute: Sir Hugh Bell, Bart., President of the Institute. By the Institution of Naval Architects: Dr. F. Elgar, F.R.S. By the Society of Chemical Industry: Dr. E. Divers, F.R.S., Past President of the Society. By the Institution of Mining Engineers: Mr. A. Sopwith, Past President of the Institution; and by the Institution of Mining and Metallurgy: Mr. W. McDermott, Past President of the Institution.

The Board of Education have issued fresh Regulations for the Training of Teachers and for the Examination of Students in Training Colleges. Amongst the conditions, which come into operation after August 1 of this year, is the following:—"No catechism or formulary distinctive of any particular religious denomination may be taught in the college or hostel, except in cases where the parent or guardian of any student requests the governors in writing to provide for the student's religious instruction in the doctrines, catechism, or formularies distinctive of any particular denomination. In such cases the governors may, if they think fit, and if the instrument under which the college or hostel is governed requires or does not prohibit the giving of such instruction in the college or hostel, comply with such request, and provide such instruction accordingly out of funds other than grants made by the Board of Education or any Local Authority." Regarding the admission of students, the Board lay down that "in no circumstances may the application of a candidate be rejected on the ground of religious faith or by reason of his refusal to undertake to attend or abstain from attending any place of religious worship or any religious observance or instruction in religious subjects in the college or elsewhere; nor on the ground of social antecedents or the like." If the grounds on which a candidate has been rejected are, in the view of the Board, unreasonable, the college or hostel concerned will be liable to a reduction in the total grant for the year not exceeding £100 on the first occasion, and to removal from the list of recognized colleges or hostels on the second occasion. Similar regulations have been issued with respect to secondary schools.

A huge Blue Book, just issued from the Board of Education, will be found most useful by those who are interested in the supply and training of teachers. The volume tells us that the Board of Education is watching the process of merging the old

pupil-teacher centres in secondary schools with much satisfaction. There is some natural unwillingness to end the centres in some towns where they have done good work, but this is gradually being overcome. That the question of the supply of teachers is seriously exercising the minds of the Board is shown by the length at which they discuss the problem. It appears that there is now one adult teacher to every forty-two scholars, and the Board aim at such a supply as will give one adult teacher to every thirty children. They say that 13,570 new adult teachers are wanted every year, and that to get these three years hence 21,000 boys and girls must be brought into the early stages of the profession at once. Of that number 15 per cent., or 3,130, will "waste away" during pupil-teachership. Of the remainder, 20 per cent., or 3,570, will "waste away" during the examination stage, leaving 14,280, and of these 5 per cent., or 710, will be lost during the training college period, reducing the original 21,000 to the necessary 13,570. As only 10,900 pupil-teachers were recognized for the first time in 1906, the outlook is rather alarming. There are also included in the Blue Book many statistical tables.

Mr. McKenna, replying to Mr. Llewelyn Williams (June 26), said a new regulation would be inserted requiring that in training colleges in Wales provision must be made for the teaching of Welsh. The effect of this would be that there must be on the staff of every training college in Wales at least one person competent to teach Welsh. It had also been arranged that students may obtain on their ordinary certificate on leaving the college a mention of the fact that they had passed a satisfactory examination in elementary Welsh, or, where this was the case, had obtained a mark of distinction in the Welsh language. Mr. McKenna, in reply to a further question by Mr. Williams, said he was aware of the serious objections to the present system of dual inspection of intermediate schools in Wales, and he hoped means might be found to put an end to it, but he was not yet in a position to make any statement on the subject.

A Blue Book has been issued by the Scotch Education Department setting forth the regulations with regard to grants to secondary schools. Hitherto the only grant allowed to Higher Class Schools in Scotland from moneys voted by Parliament has been a grant for instruction in subjects of Science and Art, distributed in terms of their Lordships' minute of May 30, 1903. Such grants used to be made to schools in Scotland by the former Science and Art Department, and they were continued on essentially the same principle by the Scotch Education Department after the transference to that Department in 1898 of the work of the Science and Art Department. It has, however, long been recognized that the placing of a premium on a single department of work in a secondary school is educationally unsatisfactory, and it is now proposed to make the whole work of the school the basis of grant, and not merely certain selected subjects. It is a condition of grants under these regulations that the work of the school be conducted according to a curriculum proposed by managers and approved by the Department. In this curriculum it will be necessary to make due provision for instruction in science and art, but the change of system renders it possible to do so with greater regard to the time requirements of the other subjects that ought to form part of a well ordered course of secondary education. Incidentally, an effect of the regulations will be to give more adequate support to secondary education in Scotland. The grant allowed under the minute of May 30, 1903, amounted last year to £17,900. For the present year, on the basis of the new regulations, a grant of £44,500 is estimated for.

During the year 1905–6 the number of students in attendance at the various training colleges for teachers in Scotland was 1,722, an increase of 79 over the number for the previous session. Of these 1,392 were King's scholars, distributed among the eight training colleges at Edinburgh, Glasgow, and Aberdeen; while the other 330 were King's students in attendance at the four training centres controlled by the Local Committees in connexion with the Universities of Glasgow, Aberdeen, and St. Andrews and the University College of Dundee. Mr. A. E. Scougal, in his report, remarks on the earnest effort and steady progress that is being made, and says he has been led to form a highly favourable estimate of the instruction and the training provided at the various colleges and centres. Year by year, he says, there has been steady improvement in the general character and condition of these institutions. "Their tone has risen very appreciably; it has become much more healthy—more academic and professional, if I may so put it—and has ceased to be that of the 'crammer' school or the 'coaching' college."

At a recent conference, held under the auspices of the N.U.T. and attended largely by representatives of the training colleges and of the N.U.T. executive, as well as by representatives of the P.-T. Centre Teachers' Federation, the following resolutions were carried:—

(1) That the University courses be open to all matriculated students who satisfy the college authorities that they are able to profit by such a course without loss to their professional work. (2) That students who have followed in college a university course shall be required to take an examination in a degree course either during or at the close of their period of training; should a student fail to pass such examination, then his recognition as a certificated teacher shall depend on the report of the training college authorities on his work in college. (3) That it is undesirable on educational and other grounds, whatever necessities may under the new regulations be forced on Local Authorities, that teachers should be made liable by bond to serve for a certain number of years in any particular locality. (4) That it is important that the training colleges should be open to students from the whole country. (5) That it is desirable to provide that the obligation of the students' declaration may be met by a definite term of service. (6) That this obligation of service may be discharged in any State-aided or rate-aided school.

The following resolutions were carried at the recent Annual General Meeting of the Teachers' Guild:—

(i.) That this meeting calls on the Council to instruct the Central Guild and Branches to consider the four amendments that have been proposed to ameliorate the tenure of teachers in endowed schools under schemes of the Charity Commission and Board of Education, viz.: (1) Expunge the clause which appears in all schemes of an endowed school, "Dismissal without cause assigned." This will need the intervention of Parliament. (2) Add to the clause entitled "Dismissal for cause assigned" the words: "The votes and names of the governors voting at each meeting shall be recorded by means of their own signatures in the minute book. Before the first meeting there shall be sent to the head master a copy of the charge or charges he has to meet." (3) Expunge the clause entitled "Declaration of head master." (4) Provide for both head and assistant masters, if any, a right of appeal in case of dismissal.

(ii.) That this meeting requests the Council to co-operate, if possible, with other Associations in improving the anomalous system of tenure which prevails in the majority of secondary endowed schools.

A deputation from the Irish National Teachers' Association, supported by representatives of all sections of Irish political opinion, waited on the Chancellor of the Exchequer (July 22) to claim additional assistance from the Treasury for primary education in Ireland. Mr. Asquith admitted that in the matter of education Ireland had not received her fair share. Something had been done to remedy that this year by providing £40,000 for a term of years for building purposes, which, he hoped, would remedy the scandalous condition of many of the schools. It would be rash for him to indicate the basis on which he thought a rearrangement ought to be made. They might rest assured that Mr. Birrell, who was one of the sturdiest and most uncompromising advocates of the extreme Irish demand, would see that their case lost nothing in adequacy of presentation. Without making any specific pledge, he assured them that he approached the question with a sympathetic mind and with a view of securing equitable treatment, and the determination, so far as his financial conscience would permit, to do what he could. Beyond that he could not go; but he hoped before this time next year to be able to lay before Parliament proposals which, although they might not satisfy Irishmen, would do something to remedy a real grievance.

An influential meeting was held at University College, London (July 3), to consider a proposal, which originated with the College "Students' Christian Association," but is entirely unsectarian in its object and scope, for the establishment of a residential hall for men students of the College. The need for such a hall has been felt for many years. The number of students coming from country homes at an early age to study at the College is very large. The number of students coming to the College from all parts of the British Empire is steadily increasing. Probably not

less than from 250 to 300 men students of the College are living in lodgings. There is little doubt that a suitable and well managed hall for 50 or 60 men students, with charges not exceeding £20 a term, would be greatly appreciated and well filled. The proposal involves a double scheme, providing, first, for the erection and equipment of a suitable building, and, secondly, for its management, when erected, as a self-supporting students' boarding house. Happily no money will be required for the purchase of ground. There is no site more suitable than one on the Hampstead Garden Suburb Estate, which will be within twenty minutes' journey of the College by the new electric tube. Cost of a building to accommodate sixty students is estimated at about £10,000 and of the equipment at about £2,000. It is suggested that a limited company should be formed.

The new buildings of University College School at Frognal, Hampstead, which were opened by the King last Friday, occupy a site of five acres, and will cost some £140,000. Between £40,000 and £50,000 is still required to free the school from debt. The school is built in three blocks. In the main block there is a great central hall, out of which twenty-four class-rooms open. This has been so planned that a master standing at one point can have every boy under his eye. This block is for ordinary teaching. To the south is another block with perfectly fitted chemical and physical laboratories, art room, modelling room, monitors' rooms, school library, and cadets' room. To the north is another block containing a gymnasium (believed to be the finest possessed by any school) and a dining hall, with facilities for dining the whole school in two relays in half an hour each. This forms another illustration of the way in which educational efficiency has been aimed at. It is thought that for boys to go home in the middle of the day is a mistake, and hence elaborate arrangements have been made for meals, in the hope that in the future all boys will spend the whole day at the school. The building, which has been erected by Messrs. Dove Bros., is fireproof throughout, roofs as well as floors being safeguarded in this way. It will provide accommodation for 600 boys—the same number as at Harrow; but, if necessary, 720 boys can be received. At the rear of the school a carpenters' shop, fives courts, a running track, and an ample playground has been provided. The architect is Mr. Arnold Mitchell.

The Leeds Education Committee recently decided that as soon as a suitable site could be found they would proceed with the erection of a training college for men and women teachers. The question has suddenly become acute owing to the fact that fifty-seven women and seventeen men pupil-teachers, the majority of whom have passed the qualifying examination with distinction, are unable to obtain admission into any of the existing training colleges. Many pupil-teachers in other West Riding towns are in a similar predicament, and the Leeds Committee therefore propose to establish a temporary training college to be ready for receiving students up to the number of two hundred by September or October next. It is suggested that buildings recently vacated by the Leeds Girls' Grammar School shall be rented. These are within a short distance of the University and from various school laboratories which will be available for the teachers. The fee proposed is £30 for a two years' course, and with help received from the Board of Education it is anticipated that the cost to the city will be very small. The establishment of hostels is also included in the scheme.

A dinner in aid of the appeal for funds made by the Council and Committee of Queen's College, London, was held on July 2. Major-General Sir Frederick Maurice, son of the founder, presided, and upwards of three hundred old pupils and friends of the College were present, including Lady Maurice, Canon Bell (the Principal) and Mrs. Bell, the Bishop of Bristol, Sir Arthur and Lady Rücker, the Master of Trinity and Mrs. Butler, Mrs. Beerbohm Tree, Mr. Butcher, M.P., Prebendary Barker, Prof. Seeley (the Dean) and Mrs. Seeley, Sir F. Marzials, Lady Lockyer, Sir Dyce Duckworth, and Mrs. Scharlieb. In proposing the toast of "The College," the Chairman said it was the first of the colleges for women, and specially claimed sympathy and support, inasmuch as it had led the way in rendering services to women's education, and was capable of yet greater service in the future. It was his father's desire to make the education given within its walls as liberal as possible. The college was founded without any endowment, but it could not go on without one. They could not come into closer relation with the University of London until they had what other colleges possessed—an endowment. The Committee had appealed for £5,000, but he asked for £10,000. Sir A. Rücker said he was convinced that the education of women would develop in many ways, and that new outlets would be found for their energies and abilities; and Dr. Butler expressed intense sympathy with the movement, and said that one of the greatest of all the many great works of Maurice was his being, as he had been called, "the pioneer in the noble cause of the education of women."

Sir Swire Smith delivered an address on Commerce and Culture on speech day at New College, Harrogate. The industrial and commercial struggle, he said, was a fight in which there was no place for the sluggard and no hope for those who fought with antiquated weapons. It had often been said that the success of Germany in the great war with France was due to the German schoolmasters. The Germans left nothing to chance: they qualified themselves for what they had in hand by their training, and now that Germany had entered upon a career of peace we were finding that the army that carried its industrial weapons was as formidable as the army that carried its guns. He hoped this country would ever be spared a warlike invasion, but there were invasions as serious, for safety from which we had to depend on the alertness of our people. "You may never see German helmets in your streets," said the speaker, "but I can take you to your shop windows in Harrogate and show you electrical appliances, aniline dyes, all kinds of textiles, and a great number of miscellaneous articles that have been made in Germany. I can show you silks and cashmeres and works of art of many kinds from France; I can also show you butter and cheese from Denmark, and numerous commodities from other countries representing many millions sterling annually, and I can show you that it has been in consequence of the superior training and greater technical knowledge of the peoples sending us these goods that they have been able to invade our markets and supply us with articles more attractive than we can make ourselves. This invasion could only be stopped by the greater skill, knowledge, and efficiency of our own people. Sir Swire Smith went on to say that he had just returned from the United States of America, and had been deeply impressed with the progress that had been made in every direction since he was there twenty-five years ago as a member of the Commission on Technical Education. He had been accustomed to speak of Germany as the leading competitor of England; but, having regard to the immense natural resources of the United States and the energy of its people, he was not sure whether that country must not be regarded as a still more formidable rival. In every department of industry he had observed the highest craftsmanship. Their factories contained the best machinery and the most perfect organization. Labour-saving appliances were to be found everywhere, and they were accepted by the work-people without hostility. How had all this been done? Well, America had for some time enjoyed a great material prosperity. The whole world paid tribute to America, which, because of its great wealth, was able to command the best ability from other countries. It secured good men by offering them high pay.

At a largely attended meeting of the National Society's Consultative Committee, which consists of elected representatives from all parts of England and Wales, the following resolutions were agreed to (July 19):—

1. That the proposed new regulations respecting training colleges and hostels contain provisions which would, if enacted, destroy the present character of such institutions and impair very seriously their power to do the work for which they were established; and, further, would render difficult, if not impossible, the maintenance of efficient religious teaching in elementary schools.
2. That there is special hardship in the provisions which prevent the attachment of denominational hostels to undenominational training colleges and universities, and undenominational hostels to denominational colleges.
3. That some of the new regulations in regard to secondary schools seriously jeopardize tho possibility of giving Church teaching to Church children whose parents ask for it even in secondary schools supported by Church endowments.
4. That the Consultative Committee, therefore, expresses its strong desire that the deputation which is to-morrow to wait upon the Prime Minister should ask for the withdrawal or adequate modification of the provisions in question, and pledges itself to support that request by all proper means to the utmost of its power.
5. That this meeting, while it would heartily welcome any further provision of undenominational training colleges and

hostels for those who desire such form of education, is of opinion that no proposals with regard to Church training colleges can be accepted which impair their denominational character.

GERMANY'S business-like Secretary for the Colonies, Herr Dernburg (says the *Field*) has decided in favour of the establishment of a colonial training college at Hamburg, designed to provide a course of study and practical work not only for those who intend to engage in a colonial career as traders or agriculturists, but for prospective officials. This early intercourse between the two classes whose co-operation is necessary to the proper development of Germany's colonial empire will, it is hoped, have very beneficial results, and, though it appears that the State of Hamburg is at first to make itself responsible for the execution of the scheme, promise is held out of an Imperial subsidy if and when the college is working on satisfactory lines. The scheme is one more indication of the increased recognition of the truth that the problems of colonial administration and development are deserving of serious attention, and ought not to be solved by a process of muddling through. France has perceived and acted upon that principle for a long time past. It is nearly a score of years since there was established at Paris an official institution, known as L'Ecole Coloniale, for the purpose of training young Frenchmen for different branches of the colonial service. In Germany itself there is and has been for eight or nine years past a colonial school at Witzenhausen for those who propose to devote themselves to a colonial career in a private capacity, and, according to the school's latest report, the demand for youths who have thus been trained is always greater than the supply. It may appear strange that in this country, the mother country of the greatest overseas Empire the world has ever seen, so little attention should be paid to specialized training of this character. The great majority of lads who go out from England to the colonies are furnished simply with the ordinary public-school education, while such a thing as a Government college through which must pass prospective administrators and other officials in the tropical dependencies of the Crown is unknown. The experiment instituted by Herr Dernburg may well be watched for the purpose of seeing whether Great Britain may not learn some lesson from German experience.

THE *Yale Alumni Weekly* writes in a recent number: "The swift and deep currents of University expansion in this country fling up every week much flotsam of import and interest. Here is a single week's partial record of things above the commonplace: Cornell is to have an expedition for archæological research in Asia Minor and Persia. Princeton is to enlarge her scientific and research work, with much increased funds and equipment. 43 per cent. of the students in Kansas University are wholly or partly self-supporting—not so striking a fact when one remembers their free tuition and that the University is to have in 1908 the sum of 367,000 dollars from the State for maintenance and a new engineering building. Bracket with this, as a sample of the support that Western States give their Universities, appropriation bills in the Illinois Legislature calling for 1,664,000 dollars chiefly for running expenses and 1,386,000 dollars for new buildings for the State University. The same institution has just established a course in agricultural journalism. Wisconsin University, also, naturally looks out for the farmers, of whom 600 have just finished a new ten days' course in agriculture. Oberlin, now seventy-five years old, will publish ere long what at Yale would be the triennial catalogue, which will contain some 30,000 names of graduates and former students, to be compared with Yale's total of about 23,000 graduates living and dead. The Teachers College annexed to Columbia has listed for the last ten years 25,000 resident and extension students. Such imperfect chronicles of a single week attest that, whatever the status of the Universities of effete Europe, those of the New World are not standing still, but, in the words of progressive Chicago, are 'making culture hum.' They bring to mind vividly the enormous power that the Universities of the country in the next generation will have over the material and social development of the country."

THE University of Illinois, where Mr. Bryce ("Ambassador Bryce," as he is called on the other side) delivered the "Commencement address" on June 12, and received the honorary degree of Doctor of Laws, is "located" at Urbana-Champaign ("The Twin Cities")—a double community of some 17,000 souls, 128 miles south of Chicago. The University is one of the largest institutions of university rank in the United States, having 2,717 students registered last year at Urbana, while nearly 1,000 more were registered in the medical departments of the University located in Chicago. The State makes large biennial appropriations in support of it. The last Legislature made a grant of 1,800,000 dollars for the running expenses of the next two years, and an additional grant of 400,000 dollars for buildings.

UNIVERSITIES AND COLLEGES.

London. At an assembly of the Faculties of Arts and Laws, of Science, and of Medical Sciences at University College (July 3), Prof. Cormack read a report on the work of the session 1906–7, which had been one of general activity and progress. Many important changes, it was stated, had resulted from the incorporation of the College in the University, and, undonbtedly, the chief of them was that the organization of the College had been brought into direct relation with that of the University. Other changes soon to take effect—namely, the departure of the boys' school to Hampstead and the completion of the new buildings for the School of Advanced Medical Studies—would render available a very large amount of room for other departments, the benefit to which would be great, especially to those in the Faculty of Arts. The most important benefits would be seen in the establishment of a series of training libraries for each of the chief Arts departments, providing for the Arts students and teachers the equivalent of the laboratory on the Science side. The number of students in the Faculties of Arts and Laws and of Science for the current session was 1,079, as against 1,105 at this time last year. Sir Edward Busk, ex-Vice-Chancellor of the University and Fellow of the College, distributed the prizes and medals to the students.

In consequence of representations which have been made to the Senate by the Government of the Cape of Good Hope, Dutch (*i.e.*, the High Dutch of Holland) has been added to the list of languages which may be offered at the Matriculation Examination.

The Senate have recognized the East London College, which is part of the People's Palace in the Mile End Road, as a school of the University in the Faculties of Arts, Science, and Engineering.

London—King's College. THE prizes and certificates were distributed by Sir Thomas Raleigh, K.C.S.I., who delivered an address (July 2). The Principal (Dr. Headlam) said that they were beginning to feel the good effects of what had been done in the past. In every direction there had been a steady advance. Arrangements for the incorporation of the College in the University were approaching completion, and it was hoped that within a short time a Bill would be ready to lay before Parliament. The incorporation could not be carried out until the necessary funds were provided. Including £5,000 each from the Clothworkers' Company and the Goldsmiths' Company, a sum of £15,000 had been received. That was a good start, but it was only a very small part of the £150,000 required to carry out the work successfully. The enterprise which they were undertaking was, he believed, most necessary for the future of the College and for building up a strong University in London.

Manchester. ON Degree Day 325 degrees were conferred, a number exceeding that of any previous year. To this must be added the Medical degrees given at the end of July, if the full number of graduates is to be estimated. 3 D.Sc.'s and 5 M.D.'s were also admitted. There were 39 M.A.'s (of whom 19 were women) and 63 M.Sc.'s (of whom 6 were women). There were 78 B.A.'s, of whom 23 took Honours (8 women), while, out of 45, 31 of the pass B.A.'s were women. There were 81 B.Sc.'s, 48 (6 women) in Honours and 33 (11 women) pass candidates. The new faculty of Technical Science was strongly represented by 37 graduates, 15 of whom took Honours, including 1 woman. Of the other new faculties, Commerce was represented by 5 B.Com.'s and Theology by 1 B.D. There were also 3 LL.B.'s.

Leeds. THE Council of the University has forwarded to the Board of Education a letter objecting to the projected Institution of Science and Technology in London being called the Imperial College, on the ground that, as the Northern Universities are providing technological institutions for students from all parts of the Empire, as well as from foreign countries, the word "Imperial" would give the

college an exclusive standing, and would tend to divert all benefactions from existing institutions whose work is worthy of recognition. At the first meeting of the governing body (July 12), the Earl of Crewe was unanimously elected chairman, and Mr. McKenna handed to him the Letters Patent containing the grant of the Charter.

Wales. The Lords Commissioners of His Majesty's Treasury have appointed a Committee to inquire and report upon the character of the work accomplished by the University of Wales and its constituent colleges, the financial position and lines of development of the colleges, and their probable requirements for staff or otherwise. The members of the Committee are: Sir T. Raleigh, K.C.S.I., D.C.L. (Chairman); Sir John Rhys, Litt.D., LL.D., Principal of Jesus College, Oxford; Principal Donald MacAlister, LL.D., D.C.L., Glasgow University; Mr. F. G. Ogilvie, C.B.; Prof. W. S. McCormick, LL.D.; Dr. Alex Hill, Master of Downing College, Cambridge. Mr. G. L. Barstow, of the Treasury, will act as Secretary to the Committee.

Lampeter. Degree Day at St. David's College (June 27) was attended by the Bishops of Llandaff, St. David's, and Bangor and a distinguished company. Principal Bebb in his annual report spoke of the urgent need of an adequate endowment for the general maintenance and the provision of a new chapel, lecture-rooms, and additional students' room, so as to allow of at least a hundred receiving the benefit of a common life instead of living in lodgings. Plans of the proposed buildings had been prepared at a cost of £25,000. One student received the B.D. degree and twenty the B.A. degree, and a large number received the Licence in Divinity. The examiners in their report expressed satisfaction at the marked general improvement in the work presented to them. A two-days bazaar in aid of the College building fund was opened by Bishop Owen. "There is ample evidence," writes the *Western Mail*, "to show that the College is steadily fulfilling a graat work for the Church in Wales, and we trust the wealthy laymen and Church will help the College to carry it on."

Dublin. At the Midsummer Commencements a large number of degrees were conferred, more than a hundred being granted to women, chiefly from the University of Cambridge, who took advantage of the special privileges which Dublin is offering. Among these the most conspicuous name was that of Mrs. Eugénie Strong, who is well known as an authority upon Roman art, and who took the degree of D.Litt., her thesis having been approved in the usual course.

THE EDUCATIONAL LADDER.

Bradfield.—Foundation Scholarships—C. H. Scott (Miss Crosthwaite, Lime House School, Wetheral, Carlisle), J. D. C. Beaver (Bradfield), W. R. Hay (Mr. F. E. Chapman, Fritham House School, Lyndhurst). Warden's Exhibition—D. Fitzmaurice (Mr. J. C. Morgan-Brown, St. Edmund's School, Hindhead, Haslemere). General Exhibitions—J. I. Cohen (Mannamead College, Plymouth), R. S. M. Sturges (Mr. I. G. Overton, Lambrook School, Bracknell), E. S. Browne (the Rev. W. N. Willis, Ascham School, Eastbourne), R. M. Hill (Mr. H. G. Underhill, Wootton Court School, Canterbury), J. C. Page (Mr. I. G. Overton, Lambrook School, Bracknell). C. Hupfeld, W. R. Bartman, and D. R. McGregor, all of Bradfield College, would have been elected to the Third, Fourth, and Fifth General Exhibitions had they not already held them.

Bromsgrove.—Entrance Scholarships: B. S. Lewis (Broadgate School, Nottingham), G. W. Perrin (Mr. Stoney, Monkstown). G. R. Hailstone (Cheltenham), E. Q. Carter (Rev. C. Black, Colwall). House Exhibitions: F. S. Banks (Edgbaston Preparatory School), E. N. G. Arkell (Miss Knapp, Ormond House, Dursley).

Canterbury, King's School.—To King's Scholarships: Juniors: H. D. Townend (Mathematics), G. H. Claypole, J. W. M. Maynard (modern subjects), C. T. Marshall (all of King's School). Probationers: H. F. Cannell (Mr. Northcott, Camberley), F. H. Fardell (Messrs. Philpott and Pugh, Ryde), C. W. Kidson (Mr. Hellard, Seaford), V. J. Austin (Mr. Healey, Malvern), G. E. L. Hargreaves (Mr. Meeres, West Ealing), C. E. Denman (Junior King's School), G. R. Dawbarn (Mr. J. W. Pearce, Sidcup), M. A. Read (Mr. Meeres, West Ealing). To Entrance Scholarships: J. C. Page (Messrs. Overton and Browne, Lambrook, Bracknell), C. W. Kidson (Mr. Hellard, Seaford), D. H. G. Northcote (Mr. Hayman, Abbey School, Beckenham), R. Juckes (Mathematics. Mr. Douglas, Godalming), H. F. Cannell (modern subjects. Mr. Northcott, Camberley), M. A. Read (Mr. Meeres, West Ealing), F. H. Fardell (Mathematics. Messrs. Philpott and Pugh, Ryde). To House Scholarships: G. R. Dawbarn (Mr. Pearce, Sidcup), G. de Mattos (Mr. Millard, Surbiton), L. E. S. Vaile (Mr. Goodchild, Cambridge), G. E. L. Hargreaves (Mr. Meeres, West Ealing), V. G. Austin (Mr. Healey, Malvern). To a Minor Entrance Scholarship: R. C. Crowley (Junior King's School).

Cheltenham.—Scholarships—A. S. C. Barnard (The College, formerly Brandon House, Cheltenham), A. M. MacLachlan (The College, formerly Cargilfield, Midlothian), J. A. Moll (The College, formerly the Junior Department), I. S. O. Playfair (Winton House, Winchester), W. D. Churcher (The Hall, Hampstead), G. G. Crocker (Ellerslie, Fremington), E. R. M. Odling (The Grange, Folkestone), B. H. Waddy (Fretherne House, London), F. D. H. Bremmer (The College, formerly private tuition), R. W. Cardew (The College, formerly the Junior Department), G. K. P. Hebbert (Ellerslie, Fremington), S. P. M. Morgan (Mourne Grange, Kilkeel), C. F. Mulvany (St. Andrew's College, Dublin), B. W. Onslow (The College, formerly The Limes, Greenwich), A. H. B. Papillon (The College, formerly Stratheden House, Blackheath), F. W. H. Pratt (The College, formerly Hurst Court, Ore), A. V. D. Wise (Oakfield, Rugby), J. C. O'G. Anderson (Dunchurch Hall, Rugby), A. D. Roberts (Junior Department, The College), R. M. Scobie (The College, formerly Timsbury, Eastbourne), W. H. Steavenson (Junior Department, The College), G. H. Ward (Junior Department, The College), W. Scott Watson (Junior Department, The College), P. Weir (The College, formerly the Junior Department). Old Cheltonian Scholarship—F. D. H. Bremner (The College, formerly private tuition). Special Army Scholarships—I. S. O. Playfair, Southwood Scholar (Winton House, Winchester); C. F. Mulvany, Dobson Scholar (St. Andrew's College, Dublin); A. H. B. Papillon, Jex-Blake Scholar (The College, formerly Stratheden House, Blackheath). James of Hereford Entrance Scholarship—E. G. James (Moorland House, Heswall). House Exhibitions—C. J. F. Bensley (Ashampstead, Eastbourne), L. G. Durno (Rugby School), G. H. Fawcett (Glengorse, Eastbourne), R. E. Hodgson (St. Christopher's, Eastbourne), T. G. Platt (Lindisfarne, Blackheath), A. S. Pulley (Belmont House, Blackheath).

Dublin University.—The Diploma in Education has been conferred upon Margaret E. Claridge, Marian V. Dunlop, Maria E. Illingworth, Mary A. Myers, Nora A. J. Outram, Mary Whitehead.

Eastbourne College.—The following have been elected to scholarships:—B. Allen (Rev. W. G. Price, Bowden House School, Harrow); T. D. Eddison (Mr. G. Podmore, Charney Hall, Grange-over-Sands); J. E. Tollemache (Eastbourne College; previously Rev. W. N. Willis, Ascham House, Eastbourne); M. Waterer (Mr. L. C. V. Wilkes, St. Cyprian's, Eastbourne).

Ely: King's School.—House Exhibitions—G. Foster (Middleton School, Bognor), F. Pattinson (The College, Hoylake, Cheshire).

Girton College.—The following awards have been made on the results of the recent Tripos Examinations:—The Thérèse Montefiore Memorial Prize to Miss D. Tarrant (First Class, Division I., Classical Tripos, Part I.); the Agneta Butler Prizes for the best classical students in the third and second year to Miss D. Tarrant and Miss A. Shillington (First Class, Division III., Classical Tripos, Part I.) respectively; the Sir Arthur Arnold Scholarship to Miss M. D. Brock (First Class, Division III., Classical Tripos, Part I.); a College fourth year scholarship to Miss D. B. Pearson (First Class, Natural Sciences Tripos. The Pfeiffer Research Studentship has been awarded to Miss C. D. Finney (First Class, Classical Tripos, Part I., 1904, and First Class, Part II., 1905); and Research studentships tenable at the College to Miss M. G. Clarke (First Class, Mediæval and Modern Languages Tripos, 1903) and Miss B. E. Smythe (First Class, Mediæval and Modern Languages Tripos, 1905); the J. E. Cairnes Scholarship for Economics to Miss A. V. Rickards (Second Class, Historical Tripos, Part I., 1904, and Part II., 1905).

Lancing.—Open Exhibition—B. A. Fixsen (Mr. Reginald Maw, Guildford); A. P. Bosanquet (Mr. A. F. Saunders, Horsell, Woking); R. G. Stanham (Lancing, formerly with the Rev. P. U. Lasbrey, Belmont House School, Blackheath); R. M. B. Mackenzie (Lancing); C. D. Pritchard (Mr. C. T. Wickham,

Twyford School, Winchester); H. W. Strong (Mr. T. B. Luckham, Cranemoor, Highcliffe-on-Sea); J. D. Peart-Thomas (Mr. H. R. Gilbert, Lynchmere School, Eastbourne).

LEEDS UNIVERSITY.—University Scholarships: W. E. Cross, H. Davies (Chemistry); B. Fairley, Hilda Thorp (Modern Languages and Literature); N. Shuttleworth (Electrical Engineering); Jessie Walker (English Language and Literature).

LONDON UNIVERSITY.—The degree of Doctor of Science (Economics) has been conferred on Mr. Charles F. Trenerry (internal student), of the London School of Economics, for a thesis on "The Origin and Early History of Insurance, including the Contract of Bottomry." The degree of Doctor of Science has also been conferred on Mr. Arthur Morley Davies (external student) for a thesis on "The Kimmeridge Clay and Coralline Rocks of the neighbourhood of Brill," and several other geological papers.

University College.—Andrews Scholarships (for students of one year's standing): Classics, Ethel M. Steuart; Modern Languages, Irene C. Dukes; Science, S. M. Hitchcock; Carey Foster Research Prize, E. P. Metcalfe; Chadwick Scholarship and Medal in Municipal Engineering, W. D. Reynolds, J. R. Wade; David Hughes Scholarship, E. Mallett; Ellen Watson Memorial Scholarship, E. Mallett; Fielden Research Scholarship in German, Agnes Löwenstein; Heimann Medal, L. F. Thompson; A. P. Head Memorial Medal, W. D. Reynolds; Jews' Commemoration Scholarship, T. J. Cash and H. S. Paterson, equal; John Stuart Mill Scholarship in Philosophy of Mind and Logic, S. Newman; Malden Medal and Scholarship, Katherine D. V. Ryder; Mayer de Rothschild Scholarships in Mathematics, F. Jackson and J. H. C. Searle, equal; Science Scholarships awarded by Her Majesty's Commissioners for the Exhibition of 1851, E. P. Metcalfe (new election), and S. E. Sheppard, D.Sc. (second year); Sharpey Physiological Scholarship, F. H. Scott, M.B., Ph.D.; Slade Scholarships in Fine Art, J. D. Innes and Mark Symons; Melvill Nettleship Prize for Figure Composition, D. G. MacLaren; Tuffnell Scholarship in Chemistry, H. E. Watson; West Scholarship in English, H. Cooper.

King's College.—The following elections have been made on the recommendation of the Inter-Collegiate Scholarships Board:—Clothworkers' Company Science Exhibitions: J. Legg (King's College, London) and H. Presland (King's College, London). Engineering Entrance Exhibitions: W. Allard (Clifton College) and W. Legg (Tiffin's School, Kingston-on-Thames). Skinners' Company Arts Scholarship: Clara M. Knight (King's College, Women's Department). Merchant Taylors' Company Science Scholarship: Florence A. Mockeridge (Woolwich Polytechnic).

Royal Holloway College.—The Driver Scholarships have been awarded—in Classics, to J. Rackham; in Mathematics, to M. Holland; in English, to D. Owen (with Founder's Scholarship); in History, to F. Street. Founder's Scholarships: Classics, E. Blencowe; Mathematics, G. Heygate and M. Mead; English, D. Owen (with Driver Scholarship), M. Cuningham Smith, and G. Moscrop; French, R. Major; German, R. Edminson, and E. Grimwade; Chemistry, M. Nottage; Physics, L. Gillman. Savory Divinity Prize: F. Street. Driver Prizes: Latin, J. Rackham; Pure Mathematics, G. Heygate; English, D. Seaton; French, M. Froggatt; History, H. Cam; Chemistry, M. Tutin; Physics, M. Tutin; Music, D. Allen.

Entrance Scholarship Examinations—Scholarships of £60 for three years to Miss G. M. Barber, English, Latin, and French (Sheffield High School); Miss D. Chandler, Mathematics (Brighton and Hove High School); Miss M. S. Gadney, German and French, with credit for Latin (Blackheath High School); Miss K. J. Jacobs, English, Latin, and Botany (North London Collegiate School); and Miss C. E. Muirhead, Classics, with credit for English (North London Collegiate School). Scholarships of £50 for three years to Miss M. E. Abbott, Classics (Clapham High School); Miss C. M. Chattell, Classics (Kensington High School); Miss F. I. Leach, Applied Mathematics and Chemistry, with credit for Botany (Notting Hill High School); Miss L. E. Raynsford, History and English, with credit for Latin (Chatham County School); and Miss G. L. Ward, Chemistry and Mathematics (City of London School). Scholarship of £35 for three years to Miss D. L. Harris, Mathematics (Oxford High School). *Proxime accesserunt* Miss M. C. Thompson, Botany, with credit for Pure Mathematics and Chemistry (St. Saviour's and St. Olave's Grammar School); Miss M. Kirk, French, with credit for Latin and Pure Mathematics (Nottingham High School); and Miss J. M. Payne, Botany, with credit for Pure Mathematics (Oxford High School).

Bedford College for Women.—The Reid Scholarship in Arts has been awarded to Miss M. S. Trehearne (Maida Vale and Portsmouth High Schools); the Henry Tate Scholarship in Science to Miss W. A. Leyshon (City Technical School, Oxford); and the Pfeiffer Scholarship in Science to Miss M. S. Crewdson (North London Collegiate School). Scholarships for the Secondary Training Course have been awarded to Miss I. B. Sachs (Newnham) and Miss M. A. Cullis (Somerville).

Miss Margaret Le Pla, B.Sc. Lond., has been awarded a Research Scholarship in Chemistry. The Early English Text Society's Prize has been awarded to Miss Gladys M. Inkster.

At St. John's Hall, Highbury, a Peache Memorial Scholarship for two years has been awarded, after an examination in Classics and Divinity, to Mr. W. Britton, of London University.

LONDON: ROYAL SOCIETY.—The Mackinnon Studentship of the Royal Society in Physical Science has been awarded for a second year to Mr. W. Geoffrey Duffield, for a research on the influence of pressure on spectra, being conducted at the University of Manchester; and the Studentship in Biology to Dr. H. M. Woodcock, to aid him in working out the life history of certain hæmatozoa of birds, an investigation which will be carried on at the Lister Institute of Preventive Medicine. The income of the Gunning Fund accrued during the past three years has been placed at the disposal of Dr. F. H. Scott for the continuation of his investigations into the metabolic processes in nerve cells.

MALVERN.—Entrance Scholarships—Senior Scholars: D. C. Henry (Messrs. Millar and Hort), B. W. Bond (Mr. A. E. H. Morrison), W. K. Pearce (Mr. E. W. M. Lloyd). House Scholars: S. A. Wallace (Mr. J. F. W. Little), E. A. Lee (Mr. Ernest Smith), G. H. Crow (Mr. Innes Hopkins), F. L. Hebbert (Rev. H. W. Waterfield). Minor Scholars: R. J. Mackay (Mr. H. F. Stallard), W. G. Woodroffe (King's School, Ely), R. O. Philips (Mr. T. Pellatt), E. G. Lawford, C. E. Hare (Mr. H. F. Stallard), and G. K. Pippet (Mr. J. M. Stuart-Edwards).

MANCHESTER UNIVERSITY.—University Fellowships, Scholarships, and Prizes (awarded in connexion with the Degree Examinations).—Beyer Fellowships in Science—V. J. Harding (Chemistry), T. Royds (Physics). Graduate Scholarships—Classics—Constance M. Watson, Sarah E. Jackson, A. F. Johnson. Modern Languages—Adelaide Horrocks. Mathematics—H. Watson. Physics—F. Whaley, W. Wilson. Engineering—S. Chapman. Chemistry—H. Watson. Botany—Edith M. Kershaw. Geology—D. M. S. Watson. Derby Scholarship—A. A. Hoyle. Mercer Scholarship—H. C. Greenwood. Leblanc Medal (Technological Chemistry)—A. V. Clegg. University Prize in Medicine—divided between H. E. Allanson and J. Gow. Victoria Scholarship in Classics—divided between Esther Crossland and Effie Watson. Bradford Scholarship in History—S. W. Jones. Shuttleworth Exhibition in History—Jane A. M'Clymont. Gilchrist Travelling Studentship—J. Charnley.

MERCHANT TAYLORS' SCHOOL.—Entrance Scholarships: W. G. T. Lever (Tottenham Grammar School), A. F. Akhurst (Mr. Herbert Large, Streatham Grammar School), H. J. R. Moseley (Mr. H. D. Moseley, The Gate House House, Kingston-on-Thames), F. P. Isaac (Mr. W. Redshaw, Harlesden College), L. H. Eberli (Mr. W. A. Ingram, Highbury Park School).

NORTH LONDON COLLEGIATE SCHOOL FOR GIRLS.—The School Scholarships have been awarded as follows:—The Clothworkers' Leaving Scholarship to Violet Cooper; Platt Endowment Scholarships of £20 each to Ethel Steuart, for Classics; to Dorothy Menzies, for Science; to Gwynneth Black, for English Literature and History; also to Margaret Heslop, Cecil Baines, Evelyn Hower, and Gladys Misick. The highest honour this year falls to Ethel Steuart, who has gained a Girton Entrance Scholarship of £50 a year for three years, being second on the list.

OXFORD UNIVERSITY.—Mr. Charles Henry Knowler Boughton, B.A. Wadham College, has been elected to the Aubrey Moore Studentship for the coming year. The recently founded Holroyd Scholarship at Keble College, confined to candidates born or resident in Yorkshire, has been awarded to Arthur James Bower, of Bradford Grammar School.

Mr. C. F. Balleine, B.A., Senior Scholar of Exeter College, Oxford, has been elected to an official Fellowship at that College. Mr. E. J. Carlyle, M.A., Fellow of Merton, has been elected to an official Fellowship in Modern History at Lincoln.

The scholarship of £25 offered to women students by the Delegacy for the Training of Secondary Teachers for 1907–8 has been awarded to Miss Alice Sergeant, of Somerville College.

Mr. John Freeman, M.A., B.M., University College, has been elected to the Radcliffe Travelling Fellowship. The Professor of Human Anatomy (Mr. Arthur Thomson) has awarded the Welsh Memorial Prize to Wathen E. Walker, Commoner of University College.

OXFORD: CHERWELL HALL.—Eighteen students obtained the Cambridge Teachers' Diploma, nine the Oxford Teachers' Diploma, and one the London Teaching Diploma. Two students were prepared for the Archbishop's Diploma to teach Theology in addition to their training work.

RAMSGATE: ST. LAWRENCE COLLEGE.—Entrance Scholarships: C. L. Corfield (St. Faith's School, Cambridge), N. Down (Glebe House School, Hunstanton), R. P. Dashwood (Junior School), C. R. Watson (Junior School): C. R. L. Falcy (Junior School), L. E. Falcy (Junior School). Nominations: L. V. Cæsar (Junior School), H. C. Champion (College), F. Reid (Junior School), F. W. W. M'Combe (Margate), G. Tilley (Junior School), D. F. Brown (Junior School).

SEDBERGH.—Scholarships—F. R. Ware (Mr. Innes Hopkins, Orley Farm School, Harrow), A. A. B. Scott (Sedbergh School, formerly with Mr. Le Maître, St. Salvador's, St. Andrews), J. A. B. Gemmel (Mr. Temple Churton, The Mount, West Kirby), E. J. Medley (Rev. C. R. Carter, Cordwalles, Maidenhead), W. B. Justice (Dulwich Preparatory School).

SHEFFIELD UNIVERSITY.—Earnshaw Scholarship: A. L. Atkin, Central Secondary School, Sheffield. Town Trustee Scholarships, tenable at the Universities of Oxford, Cambridge, or Sheffield: A. L. Atkin, Central Secondary School, Sheffield. Scholarships tenable at the University: Ethel M. Turner, Girls' High School, Sheffield, F. C. Thompson, H. E. Truelove, and J. P. Matthews. King Edward VII.'s School, Sheffield, Forth Scholarship: A. F. Chappell, Pupil-Teachers' Centre, Sheffield. Corporation Scholarship: A. Bell, Central Secondary School, Sheffield. Medical Entrance Scholarship: C. H. Wilson, Bridlington Grammar School.

TIVERTON, BLUNDELL'S SCHOOL.—Foundation Scholarships—A. M. Allen (Blundell's), F. Le G. Clark (Blundell's). Scholarships—M. W. Windle (Mr. Lloyd, Winchfield), G. Griffith (Mr. Bull, Farnborough), W. A. Abbott (Mr. Frederick, Malvern Wells), L. B. Stevens (Mr. Leakey, Westward Ho!), C. M. West (Messrs. Duckworth and Crawford, Weston-super-Mare), R. M. French (Mr. Lynam, Oxford). Exhibition—N. W. Freer (Miss Lucas (Clifton).

TONBRIDGE.—Foundation Scholarships—R. J. Hilary, I. Pilditch, and H. G. H. Hamilton (Mr. Luckham's, Highcliff, Christchurch), T. R. Jackson, P. H. Ziegler, and F. W. Musson (The Grammar School, Clitheroe), A. de St. Croix (Mr. Branfoot's, East Field House, Ditchling, Sussex), S. C. Swinburne (Mr. Branfoot's), C. B. Tuson (Mr. Hinxman's, Southey Hall, Worthing). Also the Judd Scholarship to Hilary, and House Scholarships to Hamilton and Musson.

WESTMINSTER (Challenge).—College—J. G. Barrington-Ward (Mr. Johns, Winton House, Winchester), G. C. Lowry (Mr. Padmore, Charney Hall, Grange-over-Sands), H. A. G. Phillimore (Mr. T. Pellatt, Wareham), E. T. Hippisley (Rev. D. H. Marshall, Hampstead), R. S. Partridge (Miss Lucas, Clifton), D. M. Morriss (Westminster), J. M. Troutbeck (Mr. Gladstone, Cleveden Place), C. A. M. Faure (Rev. F. Lushington, Elstree), O. J. Burgess (Mr. Storrs, Old Charlton). Non-Resident Scholarships—W. L. Selby (Westminster), W. T. R. Rawson (Mr. Helbert, West Downs, Winchester), B. H. Lunn (Mr. Hopkins, Orley Farm School, Harrow), H. E. Flint (Mr. Kilby, Lindisfarne, Blackheath). Exhibitions—J. W. C. Hughes (Mr. Ridout, Park Hill, Lyndhurst), A. F. H. Linder (Mr. Olive, Wimbledon), E. H. Wood (Rev. D. H. Marshall, Hampstead), C. E. S. Noakes (Mr. S. L. Pettitt, Buxton).

WINCHESTER.—The following are the first twenty in order of merit of the candidates in the recent examination for scholarships and exhibitions:—(1) A. I. Adam, (2) C. L. C. Hanbury, (3) C. K. J. Underhill, (4) R. M. Don, (5) M. R. K. Burge, (6) P. M. Hall, (7) K. McC. Cave, (8) R. B. Ullman, (9) M. Cuthbertson, (10) J. C. E. Inchbald, (11) J. G. B. Thomas, (12) E. A. Cook, (13) W. St. C. H. Roberts, (14) B. H. Sumner, (15) F. H. Slingsby, (16) R. B. Gibson, (17) W. L. F. Browne, (18) T. H. Sheepshanks, (19) T. D. Overton, (20) H. M. Wilkinson. Nos. 7 and 17 on the list have been elected to exhibitions. The others will succeed to scholarships as vacancies occur between now and Easter next. There will be thirteen vacancies in September.

Mr. W. M. Kerby, M.A. London, B.A. Cantab., at present on the staff of the Lycée Corneille, Rouen, has gained the degree of "Docteur ès Lettres" at the University of Rennes, with the special mark of distinction "honorable." Dr. Kerby is the younger son of Mr. William Kerby, late chairman of the Finance Committee of the Birmingham School Board.

THE LATE DR. RUTHERFORD.

REV. W. GUNION RUTHERFORD, LL.D., died at his home at Bishopstone, near Lewes, at the premature age of fifty-four. Dr. Rutherford was a native of Peeblesshire, and was educated at the Glasgow High School, St. Andrews University, and Balliol College, Oxford, where he graduated in Classics and in Science. After holding a classical mastership at St. Paul's School for seven years he was elected Fellow and Prælector of University College, Oxford. In 1883 he succeeded Dr. Scott as Head Master of Westminster, and held the office for eighteen years (till 1901).

A correspondent writes to the *Times*: "Many other men may have been better qualified to perform the multifarious tasks that fall to the modern schoolmaster, but as a classical scholar there can be no doubt that Dr. Rutherford had few equals in Great Britain. Indeed, it may be said that his unexpected death is the greatest loss that British scholarship has suffered since the death of Jebb. He was not widely known: his subjects were too recondite and his style too little popular to attract a large audience, especially in these days; but his methods and views were so original and his learning so great that his books will always command the respect of scholars, and may very likely secure to the author, in years to come, the celebrity that he missed in his lifetime. His first book, 'The New Phrynichus,' was published so long ago as 1881, when the author was an assistant master at St. Paul's, It is in form a commentary upon the text of the second-century Atticist; but in reality it is a most learned treatise upon the Attic dialect, its history, and its disguishing features. Soon afterwards came an elaborate edition of the Greek fabulist Babrius, prefaced by a very erudite discussion of the history of Greek fables in general, and interspersed with essays and notes on metre, philology, and many other kindred themes. Two features stand out in these and in later volumes. One is the author's view that, though accuracy is essential, it must be combined with an appreciation of the relative value of facts, since 'details are only valuable as a basis for generalization'; and the other is his tendency to strong language, recalling the style of scholars of a former age. It is a special temptation of men so original as Dr. Rutherford was; but it naturally did not conciliate those who could not altogether agree with him. Another book that made something of a stir in the university world was a very novel edition of Thucydides, Book IV. (1889); this was followed by a 'first recension' of Herondas, from the newly discovered papyrus; and that again by the book which contained Rutherford's most mature work, 'Scholia Aristophanica,' in three volumes (1896–1904). The first two volumes were an edition of the 'Comments adscript to the text of Aristophanes that have been preserved in the Codex Ravennas'; but the last volume, long delayed, was the more difficult survey of the whole subject, and was published under the modest title of 'A Chapter in the History of Annotation.' The book, and indeed all Rutherford's work, is worthy of a follower of the great teacher of whom he always used to speak with reverence, the illustrious Colet."

We may add that Dr. Rutherford was regarded in Germany as perhaps the foremost living representative of classical learning in Britain.

HEAD MASTERS AND ASSISTANTS.

ON the important case of Wright *v.* Zetland, which was decided in the High Court the other day, Mr. T. E. Page writes to the *Times*:

The undisputed facts are simple. A change of head masters having been made at Richmond School, in Yorkshire, the new Head, just ten days before the beginning of a term, informed the old members of the staff, four in number, that they had ceased to be masters of the school. No complaint is made against them; no attempt was made at the trial to justify their dismissal, and the sole contention of the governing body was that by law a head master can do just what he likes with his assistants, and that they have no concern in the business. Abundant evidence was given that a full term's notice before dismissal is "customary," and the jury found that this "custom" was established, and that the plaintiffs were entitled to full compensation; but the Court set

aside the verdict on the ground that no legal liability attached to the governing body. As matters, therefore, now stand the Marquis of Zetland and his fellow-governors have the satisfaction of knowing that what the jury plainly declare to be an injustice has been done to four masters in the school over which they preside, but that they themselves can "wash their hands" and be at ease.

That, however, is a point which affects only the personal credit of the governing body and the personal fortunes of the unhappy men who so rashly put faith in it. The real issue is of far wider and public interest. With the continual increase of knowledge and the growing need for highly trained ability, the importance of secondary education to the national welfare is becoming daily greater. Yet almost from top to bottom it is in a state of complete confusion. All is haphazard, and nobody knows what to teach, or how to teach it, or with what aim it should be taught. Parliament cares nothing about a subject which does not touch the great mass of voters; the Board of Education follows suit, and is so harassed about orthodoxy in primary schools that it wants to hear nothing about learning in secondary ones; and head masters with a few exceptions prefer doing whatever they find convenient, each in his own little empire, to considering what is for the general good. The one hope has hitherto been in securing able teachers who would somehow "muddle through" and produce good results under bad conditions. Unhappily, however, for various reasons, chiefly connected with questions of promotion, pay, and tenure, able men are more and more refusing to become teachers, and, assuming the present judgment to stand, that refusal must quickly become absolute. Assistant masters now learn that by the decision of a Court of first instance they are declared to have no relation whatever to the school they work in or to its governing body, but to be the personal servants of the head master, who can be dismissed without cause, without appeal, and without even the notice that can be demanded by a lackey. No fair words can do away with the ignominy of such servitude; no man of any self-respect will subject himself to it; and until it is totally swept away, either by the decision of a higher Court or by Parliament, education in public and endowed schools can only deteriorate.

CONFÉRENCES FRANÇAISES.

SOCIÉTÉ NATIONALE DES PROFESSEURS DE FRANÇAIS EN ANGLETERRE.

MME. DE STAËL ET NAPOLEON.

Par M. FERNAND DAMIENS.

LE 29 juin dernier, dans la grande salle de conférences du Collège des Précepteurs, sous la présidence de M. Minssen, et devant un auditoire nombreux et attentif, M. Fernand Damiens, professeur au "Royal Military College" de Sandhurst, a parlé de "Mme. de Staël et Napoléon." Tous les souvenirs qui se rattachent à cette grande époque sont attrayants, émouvants même, et M. Damiens a su donner à cette évocation de deux noms illustres la fraîcheur, le coloris, la vivacité d'action, l'intensité historique qu'elle comporte.

Combien intéressante, nous dit le conférencier, doit être l'histoire d'un grand homme qui, pendant qu'il révolutionne l'univers et change la face du monde par ses victoires, pendant qu'il tient l'Europe presque entière sous sa poigne de fer, est aux prises avec la première femme de son époque, avec la fille d'un ancien ministre des finances devenue l'épouse d'un ambassadeur suédois, et qui sera bientôt l'incarnation vivante de l'opinion publique.

Cette situation de deux adversaires absolument différents nous est fournie par la lutte entre Mme. de Staël et Napoléon, lutte qui pendant plus de seize ans opposera au "génie le plus extraordinaire que l'Europe ait produit"—écrit Mme. de Staël—une femme "d'un très grand talent, de beaucoup d'esprit"—dit Napoléon.

Quelles ont été les causes de cette inimitié qui, au contraire de ce que l'on a cru longtemps, ne commença pas brusquement lors de la première entrevue de nos deux personnages? Une chose certaine, c'est que, tout au début de la carrière de Bonaparte, Mme. de Staël était amoureuse du jeune général; la renommée du guerrier—qu'elle ne connaissait pas—avait enflammé son imagination romanesque au point qu'elle lui écrivit que c'était "une monstruosité que l'union du génie (Bonaparte) à une petite insignifiante créole (Joséphine) indigne de l'apprécier ou de l'entendre." Quoique ne recevant pas de réponse à ses lettres, Mme. de Staël continue à rechercher toutes les occasions—bals, soirées, dîners—où elle peut "*le* couver du regard," "*le* forcer à s'occuper d'elle." Lui, sentant en elle une puissance, tant par son intelligence que par sa position sociale, la ménage sans trop la décourager, mais aussi sans se livrer. Il n'aime pas les femmes ambitieuses et intrigantes; il n'estime que la beauté, la douceur, la grâce des épouses aimantes, des mères tendres et dévouées. De plus il ne veut pas inspirer d'inquiétudes au Directoire, et il craint le caractère impulsif, imprudent de Mme. de Staël.

Dépitée d'avoir vainement mis sa coquetterie en œuvre pour capturer cette jeune gloire, mais n'abandonnant pas pour cela la partie, Mme. de Staël fait volte face: elle continue à être enthousiaste de Bonaparte sans le lui dire, et en même temps lui fait opposition sur le terrain politique par la bouche de Benjamin Constant en l'encourageant "à faire un discours pour signaler l'aurore de la tyrannie."

Le résultat du discours fut d'exaspérer le premier consul, de donner à la presse jacobine l'occasion de lui dire qu'elle est "laide et intrigante, et que son règne n'est plus de ce monde," et de permettre aux journaux royalistes de se moquer d'elle en résumant ainsi ses ambitions: "Benjamin sera consul, je donnerai les finances à papa, mon oncle aura la justice, mon mari une ambassade lointaine, moi, j'aurai l'inspection sur tout, et, très sûrement, je régenterai l'Institut."

Mme. de Staël s'était tout d'abord réjouie du bruit fait par ce discours, mais elle fut atterrée quand elle sut que Napoléon l'avait devinée derrière "son Benjamin" et qu'il l'avait menacée de l'exil. Jamais elle n'avait pensé qu'il pût se fâcher; elle avait cru qu'il aurait eu peur d'elle et serait venu faire la paix. Elle est encore éprise de lui; elle le dit elle-même à Lucien Bonaparte: "Je deviens bête devant votre frère *à force d'avoir envie de lui plaire.*"

On pourrait croire, après une telle déclaration, que Mme. de Staël va essayer de se faire pardonner en n'intriguant plus: c'est le contraire qui arrive. Elle excite son père, le bon M. Necker, à rédiger "son chant du cygne," dans lequel il dénonce avec lourdeur les projets du premier consul qui "ne voulait pas qu'on annonçât son dessein avant qu'il fût accompli." Bientôt après, l'impétueuse fille du vieux banquier est l'âme d'un complot contre Bonaparte. Non inquiétée, pas même menacée, Mme. de Staël s'imagine que son ennemi ignore le rôle joué par elle en ces circonstances; elle se trompe étrangement. Le premier consul sait tout, mais il ne veut pas faire de scandale, il ne veut la punir que quand il n'aura pas d'autre ressource, il ne "lui fera jamais de mal inutilement." mais, quand il frappera, il sera impitoyable; et ce sera bientôt. Après la publication de "Delphine," il lui fait savoir que si elle rentre en France—elle était alors à Coppet—elle sera reconduite à la frontière par la gendarmerie. Toutefois peu de temps après elle vient s'établir à Mafliers, près de Paris. Au lieu de vivre dans le calme et la retraite, elle se conduit de telle façon que Bonaparte croit à une conspiration contre son pouvoir. Gravement préoccupé, ce dernier ne peut laisser près de Paris un foyer d'intrigues; il lui fait intimer l'ordre de quitter la France dans les vingt-quatre heures.

Mme. de Staël va en Allemagne, vit à Berlin avec les représentants de toutes les nations ennemies de Napoléon et sème chez eux la défiance et la haine du premier consul; puis elle passe en Italie, où ce dernier la fit traiter avec égard par ses agents. Son voyage fini, elle vient rôder autour de Paris sous l'œil bienveillant de Fouché, ministre de la police. Elle surveille l'impression de Corinne, puis repart pour Coppet. En 1810 un nouveau roman est prêt, elle veut le publier à Paris. Elle vient s'installer au château de Chaumont en dépit de son ordre d'exil non révoqué. A Chaumont elle joue à l'impératrice, elle y tient une véritable cour, elle nargue le pouvoir. Napoléon se fâche tout rouge: l'exil reprend toute sa rigueur, les épreuves de "l'Allemagne" sont saisies.

Mme. de Staël, qui s'est refugiée à Coppet, ne tarde pas à s'y ennuyer, elle s'en échappe malgré la surveillance du préfet de Genève, et, par la Suisse, l'Autriche, la Galicie, arrive à Moscou, puis à St Pétersbourg où elle est fêtée par les impératrices et l'aristocratie. De là elle gagne Stockholm, où elle négocie une entente entre son ami Bernadotte et l'empereur de Russie qui l'a bien reçue, entente dirigée contre Napoléon. De Stockholm elle va à Londres où l'accueil enthousiaste qu'on lui fit dépassa ce qu'on lui avait promis.

La chute de Napoléon arrive et les portes de la France sont ouvertes à Mme. de Staël qui y rentre immédiatement "triste et le cœur souffrant" de voir le pays et Paris occupés par les étrangers. Elle reprend immédiatement sa place parmi les puissants du jour; elle s'efforce d'apporter la lumière, la conciliation, l'équité au milieu des partis, mais n'y parvient pas. La brusque rentrée en scène de Napoléon lui fait reprendre la route de Coppet. L'empereur regrette qu'elle soit partie; il sait qu'"elle fut bonne pour lui pendant ses malheurs."

La défaite vient de nouveau et pour toujours, cette fois, mettre une terme à cette longue querelle du tout puissant empereur et de l'impératrice de la pensée. Mais qui fut vainqueur? Nul doute que ce fut Mme. de Staël. Napoléon lui même en donne la raison: "Il n'y a," dit-il, "que deux puissances dans le monde: le sabre et l'esprit. A la longue le sabre est toujours battu par l'esprit."

Napoléon veut gouverner à sa guise, en despote militaire; Mme. de Staël proclame hautement les principes de liberté et de dignité "sans lesquels l'espèce humaine ne serait qu'une horde de barbares ou un troupeau d'esclaves."

Mme. de Staël s'est fréquemment trompée en combattant Napoléon, elle a souvent été injuste, victime de son aveuglement; elle n'a pas compris la grandeur du rôle joué par son adversaire, mais elle n'a jamais commis de bassesses: sa nature était haute et généreuse, elle s'est sacrifiée à l'idée qu'elle défendait. Elle ne fut pas seulement une femme énergique et intelligente, elle n'était pas douée que d'un très grand talent; elle avait un très grand cœur, et c'est avec ce cœur qu'elle defendit la liberté, "la seule chose qui circule avec le sang dans toutes les époques, dans tous les pays—la liberté, et ce qu'on ne peut en séparer, l'amour de la patrie."

CORRESPONDENCE.

[*We do not hold ourselves responsible for the opinions expressed by our correspondents.*—Ed. *E.T.*]

TESTIMONIALS AND REFERENCES.

To the Editor of "The Educational Times."

Sir,—In the scholastic profession it is universally the custom for head masters to give written testimonials to assistants on leaving. These testimonials, however, are usually accepted "cum grano salis," and head masters generally make confidential inquiries as well. Now this confidential inquiry system opens the way to manifest abuse. My own experience is a case in point. I have been a teacher in secondary schools for some ten years. During that time I have held several posts, but I have usually only applied for one or two, and never found any difficulty in obtaining employment. Some two years ago, however, I left a post on account of a personal disagreement (which had nothing whatever to do with my work). My then head master gave me an excellent written testimonial. In due course I got into communication with other principals, but, at the last moment, negotiations invariably fell through. As a consequence I have now been out of a berth for two years. I have ascertained indirectly that my late chief has—out of mere spite—been contradicting in his private and confidential reference the report he gave of my work in his written testimonial. In his reference, according to a gentleman to whom he wrote, he has described me and my work in such a way as would render it impossible for any head master to engage me. Now I have, as far as I see, no remedy. I can't definitely ascertain what he does say against me. But surely this state of things is scandalous. That a man of my years' experience in teaching—not unattended by success—should be driven out of the profession in this fashion is nothing short of scandalous.

Can any of your readers suggest to me any steps by which I can render this head master's conduct nugatory?—I am, Sir, &c.

A Cambridge Graduate.

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CURRENT EVENTS.

Fixtures.

M. AUGUSTE CANIVET, B.-ès-L., will address the Société Nationale des Professeurs de Français en Angleterre on "L'Ilot du Grand-Bé" at the College of Preceptors on September 28, at 4 p.m.

* * *

THE following courses, open free to teachers in secondary and elementary schools in the County of London, will be given at Bedford College for Women in the Michaelmas Term:—(1) "Geology for Teachers of Physical Geography," by Miss C. A. Raisin, D.Sc., beginning October 9, 6 p.m.; and (2) "The Organization of Nature Study Courses in London Schools," by Miss M. R. N. Holmer, M.A., beginning October 5, 10.30 a.m. Syllabuses on application to the Principal.

* * *

UNDER the auspices of the Delegacy for the Training of Secondary Teachers, a course of Lectures and Practical Work will be held at Oxford, August 3–30, dealing with all the School subjects and with the Theory of Education. Apply to V. Perronet Sells, M.A., Old Clarendon Building, Oxford.

* * *

WE are officially informed that the provisional lists of teachers registered in the Teachers' Register will be open for public inspection and copying, free of cost, during two calendar months, commencing on Thursday, August 1, 1907, at the Offices of the Council, 49 and 50 Parliament Street, Westminster, S.W.

Honours.

BIRTHDAY HONOURS:

Baronet: Mr. Walter Scott, publisher.

Knights: Dr. James Donaldson, Principal of St. Andrews University; Mr. W. S. Gilbert, dramatist; Prof. H. von Herkomer, R.A.; Prof. John Knox Laughton, King's College, London; Mr. W. Q. Orchardson, R.A.; Dr. John Rhys, Master of Jesus College and Professor of Celtic, Oxford.

K.C.B.: Dr. Edwin Ray Lankester; Mr. R. L. Morant.

* * *

SIR JOSEPH DALTON HOOKER, G.C.S.I., M.D., &c., late Director of the Royal Gardens, Kew, has been appointed to the Order of Merit. Sir Joseph also holds the Prussian Order Pour le Mérite.

* * *

ON the occasion of the Royal visit to Bangor the honour of knighthood was conferred upon Dr. H. R. Reichel, Principal of Bangor University College.

* * *

THE University of Oxford will confer (September 30) the honorary degree of D.Sc. upon Prof. Charles Barrois, Lille; Prof. A. Heim, Zurich; Prof. A. Lacroix, Paris; Prof. A. Penck, Berlin; Dr. Hans H. Reusch, Norway; Prof. F. Zirkel, Leipzig.

* * *

THE University of Cambridge has conferred the honorary degree of Sc.D. upon Waldemar Cristopher Brögger, Professor of Mineralogy and Geology in the University of

Christiania; Geheimrat Hermann Credner, Director of the Geological Survey of Saxony, Professor of Geology in the University of Leipzig; Prof. Louis Dollo, Curator in the Royal Museum of Natural History, Brussels; Albert de Lapparent, Professor of Geology and Mining in the Catholic Institute, Paris; Prof. Alfred Gabriel Nathorst, Keeper of the Department of Fossil Plants in the State Museum of Sweden, Stockholm; and Geheimrat Professor Heinrich Rosenbusch, Professor of Geology and Mineralogy in the University of Heidelberg.

* * *

Manchester University has conferred the following honorary degrees:—

LL.D.: Baron Kikuchi, late Minister of Education, Japan.

D.Litt.: Arthur John Evans, Fellow of Brasenose College and Keeper of the Ashmolean Museum, Oxford.

D.Sc.: Arthur Gamgee, M.D., LL.D., F.R.C.P., F.R.S., Emeritus Professor of Physiology; George Ellery Hale, Sc.D., LL.D., Professor of Astro-Physics, Chicago University.

M.Com. (Official): Drummond Fraser, Lecturer on Banking; and R. N. Carter, Lecturer on Accounting.

* * *

Liverpool University has conferred the following honorary degrees:—

LL.D.: Sir Edward Lawrence and Mr. E. K. Muspratt (Pro-Chancellors), and the Rev. Dr. G. H. Rendall (Charterhouse), first Principal of the University College.

Litt.D.: Prof. A. C. Bradley.

D.Sc.: Prof. R. A. Forsyth, Prof. Francis Gotch, Prof. Osler, Principal Sir Oliver Lodge, Sir John Murray ("Challenger"), Prof. Wilhelm Ostwald (Leipzig), Prof. Sir William Ramsay (London), Sir H. E. Roscoe, and Dr. C. L. A. Laveran (Pasteur Institute).

D.Eng.: Sir A. B. W. Kennedy.

M.Eng.: J. A. F. Aspinall (Head of the Mechanical Department of the Lancashire and Yorkshire Railway), J. A. Brodie (City Engineer), A. Bromley Holmes (Consulting City Electrical Engineer). Official: W. H. Watkinson (Professor of Engineering), J. Wemyss Anderson (Dean of the Engineering Faculty).

* * *

Birmingham University has conferred the official degree of M.A. upon Prof. Sir Edward Elgar (Peyton Professor of Music) and Señor F. de Arteaga (Lecturer in Spanish and Italian); and the official degree of M.C. upon Prof. A. W. Kirkaldy (Professor of Finance).

* * *

Leeds University has conferred the honorary degree of D.Litt. upon the Rev. Robert Collyer, "a distinguished American minister, born at Keighley 83 years ago."

* * *

Harvard University has conferred the following honorary degrees:—

LL.D.: Mr. Bryce (British Ambassador), M. Jusserand (French Ambassador), Mr. Root (Secretary of State), the Duke of the Abruzzi, Dr. Vinogradoff (Professor of Jurisprudence, Oxford), and President Woodrow Wilson (Princeton).

D.Litt.: Dr. Theodor Barth.

M.A.: Henry Arthur Jones (dramatist).

* * *

Yale University has conferred the honorary degree of LL.D. upon Senator Knox (candidate for the Republican Presidential nomination) and Herbert Putnam (Librarian of Congress).

* * *

A committee of former pupils and friends has been formed to raise a memorial to the late Prof. Pirie (Aberdeen).

A similar movement is on foot to recognize appropriately the scientific services of Prof. McKendrick (Glasgow).

* * *

Prof. L. C. Miall, F.R.S., of Leeds University, has been presented with his portrait in oil (by Mr. Fred Yates, London), on his retirement. The portrait has been handed over to the University, and will be hung in the College Hall.

* * *

Prof. J. A. Stewart has been elected to an honorary Studentship at Christ Church, Oxford, where he was formerly Student and Tutor.

* * *

The Fellowship of the City and Guilds of London Institute (F.C.G.I.) has been conferred upon Mr. Alford E. Young, A.C.G.I., A.M.I.C.E., &c., Chief Surveyor, Federated Malay States, for his original and valuable work in the Trigonometrical Survey of the Malay States.

Endowments and Benefactions.

The University of Birmingham has received from Mr. J. Arthur Kendrick, Berrow Court, Edgbaston, a valuable collection of horns (chiefly of African Ungulata); and from Mr. A. D. Innes, M.Sc., a former student in the Zoological Department, a collection of some 3,000 specimens of Insecta (principally Lepidoptera and Coleoptera), chiefly gathered in the Midland Counties.

* * *

The friends of the late Prof. Weldon have offered a sum of about £1,000 for the foundation of a prize to perpetuate his memory and to encourage biometric science.

* * *

Some £16,000 is wanted to place the Franco-English Guild (Guilde Internationale) of Paris on a permanent footing. Donations are received by Mr. H. S. A. Hoy, Bush Lane House, Cannon Street, E.C.; or Mr. R. H. Allpress, City of London School, E.C.; cheques may be paid to the credit of the Guilde Internationale Endowment Fund at the London and County Bank, Lombard Street, E.C.

* * *

The Rhodes Trustees have offered to Bishop's Stortford School two scholarships, £20 a year each; and Mr. John Barker, M.P., will give a further exhibition (£20, for the next five years) to the best candidate.

* * *

Sir John Jackson, C.E., London, has endowed a "Professor Tait's Memorial Fund" to the extent of some £200 a year, for the encouragement of physical research in the University of Edinburgh.

* * *

An anonymous donor has given two research studentships in physics—£60 and £40—to University College, London. First award next session.

Scholarships and Prizes.

At King's College, London, there will be offered, next September, (*a*) two Warneford Scholarships of £25 each for four years, open to all candidates at the commencement of either their Preliminary Science or Medical course; but any student who joins the College in the preceding Summer Session may compete. Subjects of examination: (1) Divinity, (2) English History, (3) Latin, (4) Greek, (5) French, (6) German, (7) Mathematics. Divinity is compulsory, and candidates may not take more than four of the remaining subjects. (*b*) An Entrance Scholarship, £50, for students who propose to take a Medical degree at Oxford, Cambridge, or other

British University, having already passed the examination of their university in Biology, Chemistry, and Physics. Subjects of examination: Anatomy and Physiology. In each subject there will be a written paper and a practical examination. (c) A Sambrooke Medical Exhibition (Mathematics and Science), £100, open to all candidates at the commencement of their course of studies, either as Preliminary Science or as Intermediate Medical students; but any student who joined the College in the preceding Summer Session may compete. Subjects of examination; (1) Mathematics, Arithmetic, Algebra, and Geometry: (2) Inorganic Chemistry; (3) Elementary Physics; (4) Botany; (5) Zoology. Examinations will begin September 24. Names of candidates to be sent to the Secretary of the College on a form to be obtained in the Office, before 2 p.m. on September 10.

Appointments and Vacancies.

Dr. Hermann Georg Fiedler, M.A. Non-Coll., Ph.D. Leip., Taylorian Lecturer in Old and Middle High German and German Philology at Oxford, and Professor of the German Language and Literature and Germanic Philology in the University of Birmingham, has been elected Taylorian Professor of the German Language and Literature in the University of Oxford.

* * *

Dr. George Dreyer, M.D. Cop., Lecturer in General and Experimental Pathology in the University of Copenhagen, has been elected to the new Chair of Pathology in the University of Oxford.

* * *

Mr. Adam Sedgwick, M.A., F.R.S., Fellow and Tutor of Trinity College and University Reader in Animal Morphology, has been elected Professor of Zoology and Comparative Anatomy in the University of Cambridge.

* * *

The election to the Professorship of Fine Art at Cambridge will take place on October 15. £340.

* * *

Dr. Thomas Hodgkin, B.A., D.C.L., Litt.D., has been appointed Creighton Lecturer in the University of London for 1907–8.

* * *

Mr. J. L. Myres, M.A., Senior Student and Tutor of Christ Church, Oxford, has been appointed to the Gladstone Chair of Greek in Liverpool University.

* * *

Dr. R. A. Williams, Reader in German, London University, has been appointed Professor of German in Dublin University, in succession to the late Dr. Selss.

* * *

Mr. Sidney Stanley Dawson, F.C.A., head of the firm of Dawson, Langley, Chevalier, & Graves, chartered accountants, Liverpool, has been appointed Professor of Accounting in Birmingham University, in room of Prof. Dicksee, who has resigned in order to take a position in connexion with the business training of Army officers.

* * *

The Chair of Latin in Queen's College, Belfast, is vacant through the sudden death of Prof. T. W. Dougan, who has held it since 1882. Prof. Dougan was a Fellow of the Royal University of Ireland, and a former Fellow of St. John's College, Cambridge.

* * *

At University College, London, Dr. Charles Spearman has been appointed Reader in Experimental Psychology; Mr. A. R. Richardson to be Assistant in the Department of Pure Mathematics; Mr. E. Cunningham, M.A., a former Senior Wrangler, to be Assistant, and Mr. W. D. Reynolds to be Demonstrator, in the Department of Applied Mathematics; Mr. T. G. Hill to be Assistant in the Department of Botany; Mr. G. S. Hett to be Assistant in the Department of Anatomy and Curator of the Anatomical Museum; and Mr. A. J. Bremner to be Demonstrator in the Department of Mechanical Engineering.

* * *

At King's College, London, Mr. O. S. Sinnat, B.Sc. Vict., has been appointed Senior Demonstrator in Engineering; Mr. C. M. Brown, B.A., Lecturer in Experimental Psychology; and Mr. E. A. Lewis, D.Sc. (Econ.), Lecturer in Modern History in the Evening Classes.

* * *

At Leeds University Mr. Walter Garstang, M.A., D.Sc. Oxon., Chief Naturalist to the Marine Biological Association, has been appointed Professor of Zoology, and Mr. V. H. Blackman, M.A. Cantab., sometime Fellow of St. John's, Professor of Botany, the two chairs taking the place of the Professorship of Biology held by Prof. Miall; and Miss Alice M. Grant, M.A. Vict., Jones History Fellow (Owens), and formerly Assistant Lecturer in History at Cardiff University College, has been appointed Lecturer in History. Miss Grant is now engaged in arranging the Library of the late Lord Acton at Cambridge University.

* * *

Mr. J. Mercer Irvine, M.A. St. Andr., B.Sc., LL.B. Edin., Advocate, Lecturer in Civil Law, University of Glasgow, has been appointed Professor of Law in the University of Aberdeen.

* * *

At University College, Cardiff, Mr. D. G. Taylor, M.A., has been appointed Lecturer in Pure Mathematics; Mr. D. E. Thomas, B.Sc., Assistant Lecturer and Demonstrator in Physics; and Mr. J. H. Sugden to be Lecturer in Hygienic Chemistry in the Public Health Department.

* * *

The Delegates of the Common University Fund, Oxford, will elect early in Michaelmas Term a Lecturer in Economic History. £250.

* * *

The Rev. H. W. McKenzie, M.A. Oxon. and Dunelm., Head Master of Durham School, has been appointed Head Master of Uppingham School, in room of the Rev. Dr. E. C. Selwyn, who is leaving at Christmas.

* * *

The Rev. T. B. Hardy, B.A. Lond., assistant master, Nottingham High School, has been appointed Head Master of Bentham Grammar School, in succession to the Rev. J. Llewellyn, who has accepted the living of Ingleton.

* * *

The Head Masterships of Kibworth, Shaftesbury, and Thornbury Grammar Schools are vacant.

* * *

Mr. J. S. Haldane, M.A., F.R.S., Fellow of New College, Oxford, has been appointed Reader in Physiology, Oxford University.

* * *

Mr. R. B. Mowat, B.A., formerly Exhibitioner of Balliol, has been appointed Assistant Tutor at Corpus Christi College, Oxford, with a Fellowship.

* * *

Mr. R. L. Reiss, B.A. Balliol, has been appointed Lecturer in Law at Magdalen College, Oxford.

* * *

The Rev. J. R. W. Thomas, M.A., Chaplain and Tutor, St. Mark's College, Chelsea, has been appointed Principal of the Diocesan Training College, Fishponds, Bristol.

Mr. George Robertson, M.A. Edin., Exhibitioner and honorary Scholar of Balliol College, Oxford, has been appointed Professor of Classics in the Grey University, Bloemfontein.

* * *

Canon Kelly has resigned the Vice-Principalship of the Scholae Episcopi, Manchester, on account of age.

* * *

Mr. C. R. Young, B.Sc. Lond., Assistant Lecturer in Chemistry at St. Andrews University, has been appointed Junior Demonstrator in Chemistry at Sheffield University.

* * *

Dr. J. Halm, Lecturer on Astronomy, Edinburgh University, has been appointed Chief Assistant at the Cape Town Observatory.

* * *

Mr. A. W. Hill, Fellow and Dean of King's College, Cambridge, and University Lecturer, has been appointed Assistant Director of the Royal Gardens, Kew.

* * *

The St. Andrews Provincial Committee for the Training of Teachers have appointed Mr. John Davidson, M.A., D.Phil. Edin., Head Master, High School, Stranraer, Master of Method; and Mr. R. C. Ash, M.B., Ch.B., Carnegie Institute, Dunfermline, Lecturer on Personal and School Hygiene and Medical Officer.

* * *

The Council of the Girls' Public Day School Trust have appointed Miss Gertrude Wise, Cambridge Natural Science Tripos, Newnham College, Head Mistress of Norwich High School; Miss Elsie Nicol, Cambridge Mathematical Tripos, Newnham College, Head Mistress of Bath High School; Miss Winifred Slater, M.A. Lond., Cambridge Classical Tripos, Newnham College, Head Mistress of Paddington High School; and Miss Dorothy Gale, Oxford Final Honours Modern Languages, Holloway College, Head Mistress of Shrewsbury High School.

* * *

Mr. S. G. Rawson, D.Sc. Lond., F.I.C., Director of Education for Worcestershire and formerly Principal of the Technical College, Huddersfield, and Lecturer at Liverpool University, has been appointed Principal of the Battersea Polytechnic.

* * *

Mr. F. Durrant Fox, M.A., has been appointed Principal of the Secondary School and Technical Institute, Chorley.

* * *

Miss M. Hill, B.Sc. Lond., has been appointed Assistant Lecturer in Biology for the Natural History Course at Swanley Horticultural College, beginning in September.

* * *

Miss Helen G. Thompson, B.Sc. Lond., Nat. Sci. Tripos Camb., has been appointed Junior Demonstrator in Physics at Bedford College for Women.

* * *

Mr. James Ward, Head Master of the Macclesfield School of Art, has been appointed Head Master of the Metropolitan School of Art, Dublin.

* * *

An Assistant Secretary to the Council and Senate is required at the University of Manchester (£250). Apply to the Registrar.

* * *

A School Secretary is required at Merchant Taylors' School (£200). Apply to Head Master.

* * *

A Lecturer in Biology, Botany, and Zoology is required at the Science, Art, and Technical School, Plymouth. Apply to Mr. E. Chandler Cook, 18 Princess Square, Plymouth.

Miss Cora B. Sanders, First Class Modern Languages Honours School, Oxford, some time resident tutor at Lady Margaret Hall, Oxford, has been appointed Registrar and Director of Women Students at the South-Western Polytechnic, Chelsea.

* * *

Mr. J. H. Gettins, B.A., Lecturer in Education and Master of Method at University College, Reading, for the past eight years, and for four years tutor and assistant master of method at the Borough Road College, Isleworth, has been appointed Principal of the Day Training College, Liverpool University.

* * *

Misses Henley and Field have been appointed assistant mistresses in the Day Training College for Women, Birmingham.

* * *

An assistant master (Mathematics) and an assistant mistress (Science) are required at Gosport and Alverstoke Secondary School. Apply to Head Master.

* * *

An assistant mistress (good Geography and History) is required by the Kent Education Committee. Apply to Miss Merryman, B.A., County School for Schools, Cavendish House, Ramsgate. Also a junior form mistress (conversational French). Apply to Miss Taylor, County School for Girls, Tonbridge. And an assistant mistress (Classics and English). Apply to Mr. F. Whitehouse, County School, Dover.

* * *

A Modern Language Mistress (Direct Method) is required at the Manchester High School for Girls. Apply to the Head Mistress.

* * *

An assistant master (English, French: Degree with Distinction in Modern Languages) is required at Keighley Trade and Grammar School. Apply to Mr. H. Midgley, Secretary, Education Offices, Keighley.

* * *

An assistant master (lower form) is required at Bede Collegiate School, Sunderland. Apply to Mr. T. W. Bryers, 15 John Street, Sunderland.

* * *

Miss E. K. Laker, N.S.P.E., of the Vardon Physical Training College, has been appointed games and gymnastic mistress to the Margate Ladies' College.

Literary Items.

The *Preparatory Schools Review* for July, among much good matter (as usual), discusses the question of "Moral Instruction"—adversely to the League's syllabus.

* * *

"Dickens used a word which is the greatest in the language for children, the word 'kindle'—the boy must be 'kindled.'"—So says Mr. J. L. Hughes in (the first part of) a paper on "The Vital Revelation of Froebel" in *Child Life* for July. In the same number Mrs. Kirk discourses on "The Training of the Colour Sense in Children": in our June issue we noticed her elaborate book on the subject (E. J. Arnold & Sons, Leeds).

* * *

The *School Review* for June contains a most interesting "Symposium on the value of humanistic, particularly classical, studies as a preparation for the study of Law, from the point of view of the profession," being part of the programme of the Classical Conference at Ann Arbor, Michigan, March 27, 1907. In 1906 similar papers and addresses were given on the bearing of such studies on the study of Med-

icine and Engineering. Next year will be discussed their bearing on the study of Theology.

* * *

The Museum Gazette and Journal of Field Study, conducted by Dr. Jonathan Hutchinson (6d. monthly, John Bale, Sons, & Danielsson), has completed its first year successfully. It is worked in connexion with the Haslemere Educational Museum, and contains brief and pointed papers of a scientific yet popular character upon the widest variety of interesting matters.

* * *

THE first number of the *Psychological Clinic*, issued from the Psychological Clinic Press (Philadelphia, Pennsylvania), under the editorship of Prof. Lightner Witmer, of the University of Pennsylvania, opens an important vista of practical study. We wish all success to this "journal for the study and treatment of Mental Retardation and Deviation." Prof. Witmer's experience inspires confidence.

* * *

THE February–April number of the *Association Review*, published by the American Association to promote the Teaching of Speech to the Deaf, at Washington, reports at great length the proceedings of the Seventh Summer Meeting. It contains very interesting papers on a large number of subjects connected with the teaching of the deaf.

* * *

MESSRS. JACK announce a new series of dainty volumes—"The Great Operas"—under the editorship of Mr. J. Cuthbert Hadden. Each volume will deal with one of the great operas, and Mr. Byam Shaw will furnish coloured illustrations.

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MESSRS. HACHETTE'S new "Catalogue of Standard and Popular Works for the Study of the principal European Languages" is very convenient for reference.

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MESSRS. GEORGE PHILIP & SON'S "Catalogue of Atlases and Sheet Maps" (with illustrations) presents in systematic order a comprehensive and varied list of most serviceable works for school and general use.

General.

THE KING, accompanied by the Queen, formally opened the new buildings of University College, Bangor (July 9).

* * *

THE new University College School buildings in Frognal, Hampstead, were opened by the King (July 26).

* * *

DR. WARRE has received an album containing signed photographs—upwards of 1,000—of nearly every master and boy that was at Eton at the time of his resignation. When Dr. Warre left the school each master and boy received his photograph as his farewell gift.

* * *

HULME HALL, the new Hall of Residence for Manchester University students, was erected at a cost of £15,000. Some £7,000 more is already required for contemplated extensions.

* * *

REPTON SCHOOL has just celebrated the 350th anniversary of its foundation.

* * *

THE Franco-British Exhibition, 1908, will include a section specially devoted to Education, with the object of supplying "a complete exhibition of our national education in its various phases." The Chairman of the Education Group is Sir William Mather, LL.D.; and Mr. A. G. Symonds, M.A., is Secretary. Side by side with the British Section will be a French Section.

* * *

THE Grand Council of the Berlin Commercial University has decided to introduce a more comprehensive system of instruction in colonial affairs. In addition to the lectures already given on Colonial Geography, courses will be established in Colonial Ethnography, Colonial Politics, and Colonial Economy.

* * *

ON behalf of a number of elementary and secondary teachers in the United Kingdom, the Vice-Chancellor of Oxford University (Dr. Warren) presented to President Butler, of Columbia University, a casket and an address "in grateful recognition of the many courtesies and kindnesses extended to them during their stay" in the United States in 1906–1907.

* * *

HARVARD UNIVERSITY is starting a Business School, "to equip men to take up the duties of a highly organized business as the graduate of the law or medical school takes up his professional duties."

THE EDUCATIONAL OUTLOOK

AS SEEN BY AN AMERICAN EDUCATOR.

By W. E. CHANCELLOR.

[From the *Journal of Pedagogy*.]

[ARGUMENT.]

Thesis.—Formal education should be compulsory through the period of largest educability, from eleven to twenty years of age.

1. Every civilization hitherto has broken down from want of a sufficiency of persons able to sustain and to improve it.
2. In every preceding civilization one factor of permanence has been missing: this factor has been universal education.
3. The typical period of educability in man is early adolescence.
4. By educating all adolescents, American civilization may be made continuously progressive.

WHAT IS EDUCATION?

I propose to evaluate civilization and education in several terms of common interest and meaning. Teaching, training, instructing, cultivating, and educating are not synonymous terms. Any one with a mind can teach, and does teach; and he can teach whatsoever he wills to any willing listener. Training is drawing along. Instructing is sitting in a track. Cultivating is implanting. Educating is bringing out powers. Lecturing is collecting both materials and auditors. Professing is putting forth information. It is almost synonymous with teaching, which means showing.

Clearly, educating is the climax of all these processes. Only one who is at once scientist and artist can be an educator. Let us not confuse educator and educationist. The educator is a doer of the word. An educationist may be no educator at all, may never have seen a school in any other *rôle* than that of critic. The educator works in the laboratory and reduces and refines souls; the educationist works in the library and produces encyclopedias and theories.

The teacher shows facts, fictions, opinions, devices; he imparts knowledge, or what passes for knowledge, without reference to its purposes or values. The professor displays facts, exposes fictions, and makes and breaks opinions: he imparts knowledge that knowledge may endure in the world. The educator resolves knowledge, setting its items and truth in such order as fits the needs, interests, and powers of the pupil, and imparts knowledge so that intelligence and character may endure in the world. Education liberalizes the soul by giving it content.

CIVILIZATION THE OBJECT OF EDUCATION.

The social purpose of education and its sustaining cause is to make ready a sufficient number of men and women to maintain or to preserve civilization. In that excellent work "The Past in the Present: What is Civilization?" Dr. Arthur Mitchell, of Edinburgh, answers this question in these terms:

Civilization is nothing more than a complicated outcome of a war waged with Nature by man in society to prevent her from putting into execution in his case her law of Natural Selection. Moreover, the measure of success attending the struggle of each band or association so engaged is the measure of the civilization attained.

Man is opposed to the survival of the fittest, and proposes to preserve all, whether fit or not. Of course, the strong must therefore bear the burden of the weak. Schools, hospitals, asylums, churches, jails, infirmaries; medicine, law, education, insurance, charity, religion—these are the triumphs of civilization, the typical forms of its spirit. Thus defined, civilization has been ridiculed as "degeneracy," Nordau and Nietsche leading the chorus.

In this human struggle against natural law, narrowly defined, with the spirit of generous love for the young, the weak, the old, the sick, the bad, and the foolish, American society has, of course, manifested the results of the familiar laws commonly summarized as social evolution. Institutions and professions or occupations to serve and to enforce them have appeared. Higher and lower classes have been produced. We have our men of genius, our many men of talent, our masses of the trained and useful, and our criminals, paupers, weaklings.

Human needs and rights; property; religion and the Church, which make rights real, property worth while, and life sacrosanct; Government and the State, which guarantee property and life and give religion substance; culture, the arts, and the university, which lend beauty and dignity to life and religion; education and the school, which develop the individual to an appreciation of life, religion, government, and culture; business and vocation, which make the individual self-respecting and respectable in all the thronging affairs of the world; and last, charity, organized for the amelioration of human ills—all these creations and conditions of civilization, whose purpose is to make every kind of war, public and private, impossible, seem but threadbare themes, until in some evil day they rise and avenge themselves for the long neglect of the too easy consciences of most men.

Preparation of the Child for Complete Living.

We spend, as a people, annually 2,000,000,000 dols. for advertising; 1,475,000,000 dols. for alcoholic liquors (at retail, of course); 750,000,000 dols. for tobacco; 495,000,000 dols. for life insurance; 510,000,000 dols. for railroad transportation; 140,000,000 dols. for pensions to old soldiers; 175,000,000 dols. for Army and Navy; 50,000,000 dols. for pianos; and 275,000,000 dols. for all forms of education—public and private, from the kindergarten through the university. The daily bank clearings (domestic city business only) are 310,000,000 dols.; and the other business is at least as much more. Does 275,000,000 dols. a year seem a large amount for all kinds of education? It is 14 dols. per pupil. Did you ever notice whether or not banks are more costly to equip than schoolhouses? Why not? Is not money more precious than mind?

Of the 18,000,000 pupils in American schools and colleges nearly 17,000,000 are under sixteen years of age, and 15,000,000 are under fourteen years. The average American boy or girl has six years' schooling from which he or she is graduated at twelve years of age—in short, has attended school 780 days, or two years. The soul of man does not awaken into complete living until the dawn of adolescence, which may be fixed at fourteen years of age; consequently, the time to be in school is at fourteen years of age. Given two years' schooling, take the ages of thirteen and fourteen; given six years' schooling, take twelve, thirteen, fourteen, fifteen, sixteen, and seventeen; given twelve years, take the ages from nine to twenty-one. Is there any well educated father who will be content to see any son of his finish his formal education long before reaching his legal majority?

The child is to be prepared for complete living in all the social institutions. He is to be prepared not for the State only—citizenship is but a partial ideal; not for the Church only—even piety is but partial; not for business only—even money-making is not really all of life; not for culture only—even art is narrow; not for home, family, marriage only—even in the case of women, parentage is not a final goal; and not for war at all. I know, then, that the average child, leaving school at twelve years of age, and never having had as a teacher either a man, or a mother, or a college graduate, or even a normal school graduate, and being far too young and immature to understand any important truth about government, or religion, or culture, or business, or parentage, is not educated.

Who supposes that he is? No individual. Not one educator—scarcely any educated man—will endorse the proposition. But consolidated society, expressing itself in the soulless corporation of the State, endorses and enforces that very proposition. And I as an educator am compelled to look on with blinking eyes.

A New Factor needed.

The masses of men multiply by natural biologic law, which is that of geometric progression: two parents, six or eight or ten children, thirty-six or sixty-four or a hundred grandchildren. The criminals, weaklings, and paupers are like the leaves of the forest, renewed from the main stock in each generation; from one cause and another producing but few of their kind; perishing, indeed, often before maturity, from the arrest of physical and mental development. These criminals, paupers, and weaklings rise like scum or sink like dregs; and are to be found among the rich as well as among the poor, in palaces as well as in prisons, in luxury as well as in destitution. But the classes, so-called—the men and women of education and culture—do not multiply by biologic law. They do not multiply at all. But for constant recruiting from the masses, the classes would perish as certainly as that the series 10–9–8–7 ends in 0. The notion of the cultured is to value the individual child and to try to make something special of him. Of course, this is accomplished at the expense of reserve vitality. Class-suicide is not choice, but necessity; it is absolutely historical; and essentially inevitable. Consequently, as far as civilization endures by the over-stimulation of the few, endeavouring to make up for the lethargy of the many; as far as the strong are sacrified for the weak; as far as talent exhausts itself to supply the deficiencies of ignorance—that far, civilization is a disease; and the educational system that fosters such civilization sucks its life-blood. Drugged by the effluvia of the schoolroom and fettered by the bonds of our servitude to State or family or property or Church, as educators we seem to have neither the power nor the desire to be free and to go freely about our proper tasks.

I know, then, that American education scarcely educates at all the great multitudes of our people; by no means develops their possibilities; and that, unless some new factor is introduced, American civilization, like every past civilization, is doomed by the insufficiency of its men and women of talent and by the inevitable declension of its masses when not set free from the natural laws. For the natural man, unless taught for more than 780 days, seldom attains the power to appreciate, to utilize, and to maintain civil institutions. These scarcely taught boys and girls are thrust, generally at twelve years of age, into the grinding of the wheels of civilization—into the mills and factories most of them, some into shops, some out upon the streets.

We must organize enough Real Education.

Now the human child at twelve years of age is not a half-grown animal; has scarcely the second teeth; is fit only for the fields and woods, for good feeding and housing, and for real education. Him we thrust into the pitiless world of economic work, usually ruining him (or her) for religion, for politics, for parentage, for real business, and for culture. And when, in revenge, he thrusts his "good friends" into city councils we curse him for the wrong an ignorant and mercenary generation has done him.

So much for the school "graduates." Now as to the school teachers. What is their education? What is their culture? If the blind lead the blind, shall they not both fall into the ditch? Can those who themselves have but little power and skill in matters of knowledge, of art, and of life develop power and skill in others? Can they who do not know religion, government, business, culture, charity, family instruct in such matters or develop appreciation of such matters?

We condemn the Bell-Lancaster monitorial system; no individual educator to-day will endorse for an instant any such notions. But society, organized as the State, endorses a system that is but little better. Your great city employs as superintendent a person who must be more or less of a politician, and may be more or less of an educator, and a relatively small number of principals, teachers, and specialists, and then, pointing with pride at these heads, who usually have almost no legal authority, says: "See what a fine school system we have!" But let any one assert that the practical questions are: "Has each child a thoroughly competent teacher, an educator who loves childhood and youth, and understands boys and girls, and life, too?" and "Does every boy and girl stay at school until educated?" and "Do we give every teacher an adequate livelihood and abundant suitable apparatus?" and at once the city cries out, "Oh, be reasonable! Of course, we cannot do that."

But society must do it; or as certain, though as slow, as fate, as certain as history is certain, we must do this very thing—pay for and organize enough real education—else the inevitable disintegration of society will proceed.

Relation of Education and Social Conditions.

What is the outlook? Are educatioual conditions improving? No competent person doubts that they are. For all the factory and barrack and other false, formal, and degrading features of modern education, as a whole, the educational situation never before was as good as it is now, and the tendency is upward. But this is not the real question. Are educational conditions improving as rapidly as the general social conditions demand? General society is degenerating all about us. The exploitation of the many by the few, the expropriation of the common wealth, the defeat of property rightly understood in its purpose of sustaining, enriching, and enlarging the life of common humanity, the city and its sins against childhood, itself being a sin, and a thousand other symptoms evidence the diseases of civilization. They who see truth and dare to speak truth are unanimous upon all points except one. Some who are really competent and unprejudiced see in the present freedom of American society evidence that, after all, despite the thousand other and evil symptoms, at heart, "All's well." The commou remark is that democracy is essentially successful, despite appearances. These optimists fail to see at work a single sociological law that, once understood, explains away this apparent cause for optimism.

A civilization may evolve from its own inherent substances, or it may be produced as the outcome of the juxtaposition and inevitable conflict of several alien elements. Is ours a democracy of choice, of intelligence, of good will; or is it a democracy of face, of force, of conflict? Are we a homogeneous people, one in religion, language, blood, traditions, peacefully evolving a new social order; or are we a collection of various peoples, a heterogeneous society, indulging in toleration for the time while accumulating wealth? After we gain wealth, what then? Is there an intrinsic Americanism of the best that will finally bring us all together in a common ambition?

Experiment of Universal Free Education.

Let us look straight into the heart of the matter. We are trying a new experiment—that of uuiversal education, free to the individual. No other nation ever tried it before or is really trying it now. Because child labour is not really profitable, and because the very small child at work awakens pity, we require the educational experiment to be tried upon all children from seven to twelve, possibly fourteen, years of age. This experiment is conducted upou the narrow lines of a uniform mechanical regimentation of all children by persons characteristically incompetent for the real work of education. The real problem, which is to educate the educable youth, we evade, establishing high schools of a peculiar character for the few and evening schools to gloss over the evasion.

Moreover, we are trying this experiment in the city rather than in the country. Now the modern city is a neurasthenic psychosis, a feverishly pulsating subconsciousness, composed of irritations, apathies, passions, and despairs and supported by an over-developed body, suffering in some members from fatty degeneration and in others from atrophy. It rises before me wanton, crude, heavy, laborious, prone to pleasures, depraved, fascinating, ruinous. It has a body disproportionately large for its brain; and, as for its soul, in this age of the disintegrating Church and of declining religion, that is seldom discoverable.

The University and the School.

How does the school appear to the other great social institutions? Educators sometimes "point with pride"—pardon the trite phrase—to the university; but the university never points with pride to the school. Why not? The university does not beloug to education, but to culture. The university is the *omnium gatherum* of all knowledges and skills, of all sciences and arts, the nurse of all professions, the throne of culture. The university is very ancient, is universal in ambition, and is self-containing and self-dependent. The school is none of these; has an entirely different motive. The university professor seldom claims the school teacher as comrade and co-worker in his enterprise. On the contrary, university faculties usually assume the *rôle* of dictator, and, knowing very little of education, prescribe its methods and materials; and when these fail, as all prescriptions of the ignorant must fail, condemn the victimized educators for the failure.

The Church and the School.

The view of the school taken by the Church reflects the condition of the Church. No longer a universal institution, inertly permitting the greatest force of human nature to decline into the tombs of various cults, utterly broken apart, dependent for its power mainly upon the accidents of persouality, the Church affords three different attitudes toward the school. One is the enforcement of the servitude of education to the interests of its cult. Another is the creation of schools in subordination to its cult. A third is complete indifference; this is by far the worst. But all three modes of reaction or varieties of relation are equally guilty of the great denial, which is that *education, though an end in itself, is substantively a form of religion and the chief form*, and therefore essentially inseparable from religion.

The State and the School.

The State looks upon the school as an orphan child adopted by its grace and to be supported as a matter of duty in the bread-and-butter necessaries of existence. The State sees no fallacy and no guilt in spending 1,000 dols. a year in reforming a criminal by incarcerating him, while spending 35 dols. a year in forming a boy by educating him; sees no fallacy and no guilt in paying 5,000 or 6,000 dols. a year to a judge to sentence the criminal, and 1,200 or 1,500 dols. a year to a principal for runniug a school, or 300, 400, 500, 600 dols. a year to a teacher for making a worth-while citizen out of the boy; sees no fallacy and no guilt in placing the scholarly and disinterested educator in the control of—what shall I say?—the average Board member. In all candour, however, I must say, in exculpation of the State, that proper education cannot be maintained by tax rates. With its present means of revenue, the State cannot expend upon schools much more than a dollar, more or less, of every 100 dols. of taxable property. That dollar is about one quarter what is actually needed for education.

The Warrior and the School.

War is a social institution. I would as soon undertake to root the Church out of the world, the war and religion out of the heart of mankind, as warfare. Seldom has war been more costly of the treasures of the world than it is now. Even our comparatively unwarlike country, what with its Army and Navy, its pensions, its armouries and Militia, spends more upon war than upon education. A single cruiser costs as much as all the schoolhouses of the average American city of 250,000 people. Your generals and admirals get far higher salaries than the superintendents of city school systems. The schools of war are not for education, but for training to intelligence without heart. No really educated man could slay another save in self-defence. And yet, to be President, first become a war hero. "Vengeance is Mine, I will repay, saith the Lord."

To couquer nations righteously seud the school teacher.

Business Men and the School.

But the scorn of the school by the warrior does not equal the scorn felt by the successful agent of that series of institutions summarized in the terms Business, Property, Occupation. Go to Germany, or even to England or to Italy, to learn the proper place of the successful business man as such. Recently, these kings of Americans have been brought to book before the bar of the commonalty, spectacles have taken place of the same nature as the trial of Charles I. Shall the educator behold the glory of the multi-millionaire and live? If not, why not?

Society and the School.

Here, then, is Americau society. The men often drugged to blindness to the finer issues of life by tobacco and alcohol, hallucinated by the false lights of material success, ravening with the *auri sacra fames*; drunk with the fatigue of mill, mine, store; the women pitilessly converted into house animals, victimized by the accomplishments of needle-work, piano-playing, novel-reading, and gossip and even scandal, much of which is but too sadly true; and the children, caverned in these modern caves, sharing helplessly in the common degeneracy. Such is the society whose literary critics salute that unshamed novel "The House of Mirth" as the greatest book in ten years. I was about to wish evil to such critics and writers; but no! let them depart singly aud unsupported to those decent villages where men and women fear God and keep the Ten Commandmeuts and see things at their right values, and where to be bad is to be disgraced and vile.

But are there no sunny isles in the dismal city swamp? Of course there are. But I ask you, squarely and fairly, do the worshippers in the House of God outnumber the worshippers in the houses of Rimmon and of Mammon and of Moloch?

But what has general society to do with education? Apparently nothing; in reality everythiug. At heart the masses of humanity

are sound; to them the school belongs. Victimized by traditions and customs, by class privileges, by cliques and gangs, by partial institutions and conflicting motives, shut away from the sciences and the arts—the conditions of freedom—general society needs the school, the complete school. This can be secured only by the reciprocal processes of the inner development of the school itself and of the voluntary functioning of society to create and to support the demand. The educational hierarchy and the social democracy must conspire together to win the better school. The solution may come through general public education clubs or societies, with perhaps educators, ministers, physicians, journalists, and parents as leaders. Whether or not this will come to pass I do not undertake to say. What I do say is that, wanting the general support of society, wanting legacies, subscriptions, fees, gifts, employing taxation only, American public education is certain to prove a failure. The signs of that coming failure are on every hand.

WHAT IS NEEDED.

I admit that it may be necessary to find proper methods of partial self-support for boys and girls at school from ten to twenty years of age; but I submit that all healthy boys and girls must be required to attend varied school courses forty-eight weeks in the year and until twenty years of age. I submit that the other social institutions—family, business, religion, as well as government—must be utilized as modes for securing sufficient funds to build, to equip, and to maintain proper schools that shall afford preparation to serve, to be benefited by, and to appreciate all phases of civilized life. I submit that educators owe it to society fully to perform their functions, which include control of the school as well as service in it, work to secure the means for educational activities as well as work in receiving and expending such means, and spreading the gospel of education as well as performing its duties. I submit that there has been too much introspection and too little of that manly and womanly freedom which carries itself generously and nobly in the affairs of the world of men. Finally, I submit that when we have given up the notion of entire dependence upon the State as public teachers supported by taxes, or upon the family as private teachers supported by fees, or upon the Church as parochial teachers dependent upon donations, and when we have become an integral, independent profession, then the school may be able to rise co-equal with Church and State and as broad-based as the university, to become owner of properties, recipient of legacies, subscription fees, and gifts, and beneficiary of all the general prosperity of organized, differentiated, specialized, developing civilization.

Such a school, carrying in its heart a generous education, can give permanence to American democratic society. It will give us the one factor lacking in all past societies—a humanity sufficiently educated to appreciate and to operate an enduring civilization.

COLLEGE OF PRECEPTORS.
HALF-YEARLY GENERAL MEETING.

THE ordinary half-yearly General Meeting of the members of the Corporation was held on Saturday, July 20.

The SECRETARY having read the advertisement convening the meeting, Dr. WORMELL was appointed Chairman.

The Report of the Council was laid before the meeting, and was taken as read, a copy having previously been sent to every member. It was as follows:—

REPORT OF THE COUNCIL.

The Council beg to lay before the members of the College the following Report of their proceedings during the past half-year:—

1. During the past half-year a Course of Twelve Lectures on "The Psychological Bases of Teaching and Education" has been delivered by Prof. J. Adams, M.A., B.Sc., F.C.P., and a Course of Six Lectures on "The Use of the Voice" has been given by Dr. W. A. Aikin, M.R.C.S., L.R.C.P. A Course of Twelve Lectures on "Practical Problems of the Schoolroom," by Prof. Adams, will be given in the autumn.

2. The Christmas Examination of Teachers for the College Diplomas was held in the first week in January, and was attended by 609 candidates—350 men and 259 women. During the past half-year the Diploma of Fellow has been conferred on 1 candidate, that of Licentiate on 21, and that of Associate on 201, who had satisfied the prescribed conditions.

3. The number of candidates entered for the Midsummer Certificate and Lower Forms Examinations is 5514—about 150 less than the number entered at Midsummer last. The Professional Preliminary Examination for Certificates recognized by the Board of Education and a number of professional bodies was held, as usual, in the first week in March, and was attended by 308 candidates.

4. During the past half-year the Council have conducted the Inspection and Examination of 5 Schools by Visiting Examiners.

5. At the Members' Meetings held during the past half-year the following Lectures have been given:—"Poetry as an Atmosphere, a Discipline, and a Study," by P. A. Barnett, M.A.; "The Growth of Moral Ideas in Children," by Prof. J. J. Findlay, M.A.; "The Teaching of the Mother Tongue," by P. J. Hartog, B.Sc. Reports of the Lectures and Discussions have been published, as usual, in *The Educational Times*. A Conversazione of members of the College and their friends was held at the College on March 6, and was attended by a very numerous gathering. The Council intend to arrange for a Winter Meeting of Teachers to take place in the early part of January next.

6. During the past half-year 30 new members have been elected, and notice has been received of the withdrawal of 4. The Council regret to have to report the death of the following members:—J. B. Atkinson, W. Browning, W. D. Cox, A.C.P., Miss E. Elphick, J. Freeman, L.C.P., Rev. Canon Haig-Brown, F.C.P., J. H. Hawley, G. Hepworth, Rev. Dr. Milne, Rev. R. Wall, F.C.P.

7. The Federal Council has held two meetings during the past half-year. Resolutions concerning the Salaries of Assistant Teachers, the Inhabited House Duty, the Training of Teachers, the Workmen's Compensation Act, and the Representation of Secondary School Teachers on County Education Committees have been passed and forwarded to the proper authorities. The Head Masters' Conference has joined the Council. The subscription has again been fixed at £10 for each constituent body.

Mr. GUTTERIDGE, in reference to paragraph 3, called attention to a paragraph in the *University Correspondent*, in which it was stated that the examination at the Richmond Centre was held at an hotel.

The SECRETARY explained that the examination was held in the Masonic Hall at the rear of the "Greyhound Hotel," that there was a separate entrance, and that candidates were not in any way brought into contact with the ordinary business of the hotel. He further stated that the examination had been held in the same hall on many previous occasions, and that the arrangements had been found quite satisfactory by teachers and parents.

In reference to paragraph 7, Mr. KING asked when a report of the work of the Federal Council might be expected.

The DEAN stated that the representatives of the College reported regularly to the Council the proceedings at the meetings of the Federal Council.

The Report of the Council was then adopted.

The DEAN presented his Report, which was as follows:—

THE DEAN'S REPORT.

In addition to the general statement of the Examination work of the College during the past half-year, which has been embodied in the Report of the Council, I have now to submit to you, in detail, the statistics and results of the various Examinations.

The Midsummer Examination of candidates for Certificates took place on the 25th June to the 29th June at 156 Local Centres and Schools. In the United Kingdom the Examination was held at the following places:—Abingdon, Anerley, Ashford (Kent), Banagher, Bath, Belfast, Belper, Bentham, Birmingham, Blackheath, Blackpool, Bognor, Brecon, Brighton, Bristol, Bruff, Buttevant, Camborne, Camelford, Cardiff, Carlisle, Carmarthen, Carnarvon, Charleville, Cheltenham, Cheshunt, Coleraine, Congleton, Cork, Croydon, Devonport, Dumfries, Durham, Ealing, Earls Colne, East Grinstead, Eccles, Edinburgh, Erith, Exeter, Eye (Suffolk), Falmouth, Felixstowe, Ferndale, Forest Hill, Fraserburgh, Gosberton, Goudhurst, Grove Ferry, Guildford, Hastings, Hawkhurst, Hayle, Highgate, Highworth, Horsmonden, Huddersfield, Hunstanton, Inverurie, Ipswich, Kanturk, Kington, Launceston, Leeds, Leek, Lisburn, Liskeard, Liverpool, London, Long Sutton, Ludlow, Manchester, Mansfield, Margate, Market Bosworth, Market Harborough, Mayfield, Melton Mowbray, Merthyr Tydfil, Middlesbrough, Midleton, Mountmellick, Muswell Hill, Newcastle-on-Tyne, Newton Abbot, Northwich, Nottingham, Oswestry, Pencader, Pentre, Plymouth, Porth, Porthcawl, Portsea, Portsmouth, Quorn, Redditch, Redhill, Richmond (Surrey), Rochester, Rugeley, Ruthin, Rye, St. Leonards-on-Sea, Scorton, Seascale, Shebbear, Sheffield, Sittingbourne, Skegness, Southampton, Southend, Southport, Southsea, Southwold, Stamford Hill, Streatham Hill, Stroud, Sunderland, Taplow, Taunton, Tavistock, Thorne, Tonbridge, Torquay, Walmer, Wellingborough, Westcliff-on-Sea, West Hartlepool, Weston-super-Mare, Weybridge, Wigton, Winchmore Hill, Wisbech, Woodstock, York. The Examination was also held at Beirut, Gibraltar, Constantinople, Malta,

Krugersdorp (S. Africa), Colombo (Ceylon), Rangoon (Burma), and Lagos.

The total number of candidates examined (not including 58 examined at Colonial Centres) was 4222—2792 boys and 1430 girls.

Taking the Christmas and Midsummer Examinations together, the total number of candidates examined during the year ending Midsummer, 1907 (not including those who attended the supplementary Examinations in March and September), has been 9452.

The following table shows the proportion of the candidates at the recent Midsummer Examination who passed in the class for which they were entered :—

	Examined.	Passed.	Percentage.
First Class [or Senior] ...	473	199	42
Second Class [or Junior]	1949	1167	60
Third Class.....	1478	1061	72

The above table does not take account of those candidates who obtained Certificates of a lower class than that for which they were entered, nor of those (322 in number) who entered for certain subjects required for professional preliminary purposes.

The number of candidates entered for the Lower Forms Examination (not including 12 examined at Colonial Centres) was 1141—602 boys and 539 girls. Of these 831 passed, or 73 per cent.

At the Professional Preliminary Examination for First and Second Class Certificates, which was held on the 5th to 7th of March, in London and at nine Provincial Centres, viz., Birmingham, Bristol, Cardiff, Leeds, Liverpool, Manchester, Newcastle-on-Tyne, Northam, and Taunton, 308 candidates presented themselves.

Practical Examinations to test Ability to Teach were held in February and May. At these Examinations 10 candidates presented themselves, and 9 obtained Certificates.

Dr. Dickinson congratulated the Council on the alterations that had recently been announced in the regulations for the Certificate Examinations, in particular with regard to the simplification of the Arithmetic papers and the extension of the time allowed for English Grammar and Literature. He thought, however, that there was still room for improvement in the papers set for the Lower Forms Examination, which were hardly simple enough for very young candidates. For instance, he thought it too much in the French paper to expect questions to be answered in French.

The Dean remarked that the method now generally adopted in the teaching of modern foreign languages was to get the pupils from the very beginning to use the language colloquially, and this had been taken account of to some extent in the setting of the French papers, of course in the simplest possible way.

Mr. Millar Inglis suggested the advisability of setting alternative papers for candidates who had been taught on the new or the old method.

The Report of the Dean was then adopted.

A vote of thanks to the Chairman concluded the proceedings.

ADJOURNED MEETING OF THE COUNCIL OF THE COLLEGE OF PRECEPTORS.

An adjourned meeting of the Council was held on July 20. Present: Mr. E. A. Butler, Vice-President, in the chair; Dr. Armitage Smith, Mr. Barlet, Rev. J. B. Blomfield, Mr. Eve, Mr. Millar Inglis, Mr. Morgan, Miss Punnett, Mr. Starbuck, Rev. J. Stewart, Mr. Storr, Rev. J. Twentyman, and Prof. Foster Watson.

The diploma of Licentiate was granted to Mr. C. E. Bruce-Mitford and that of Associate to Miss G. E. Simcoe, who had satisfied the prescribed conditions.

The following books had been presented to the Library since the last meeting of the Council :—

By the Author.—Kettle's Social Education.

By Miss M. J. Lyne.—Sir Oliver Lodge's Substance of Faith.

By Dr. Maples.—Report on Higher Education in the Administrative County of Middlesex, 1907.

By the General Medical Council.—Minutes of the General Medical Council, January to May, 1907.

By G. Allen.—Jones's Ruskin's Of King's Treasuries.

By E. Arnold.—Lunn's Latin Exercises on Latin Models; Marshall's Beginner's Book of Greek.

By A. & C. Black.—Reynolds's The Americas (Regional Geography); Snape's Geographical Diagrams.

By the Cambridge University Press.—Streane's Book of Esther (Cambridge Bible).

By W. B. Clive.—Matriculation Directory, June, 1907.

By Hachette & Co.—Bué's Toutey's Lectures Primaires Illustrées; Ceppi's French Lessons on the Direct Method.

By Methuen & Co.—Fuller's Le Docteur Mathéus; Wallace-Hadrill's Revision Notes on English History.

By the Oxford University Press.—Canivet's De Bourrienne's La Jeunesse de Bonaparte; Innes's Kingsley's Westward Ho!; Payne and Beazley's Hakluyt's Voyages of Hawkins, Frobisher, and Drake; Renault's Michelet's Louis XI et Charles le Téméraire; Russell's Sequel to Elementary Geometry.

By Rivingtons.—Hartog's Dumas's L'Evasion du Duc de Beaufort; Nodier's Trésor des Fèves et Fleur des Pois; Stendhal's Waterloo, and Poetical French Reader; Lyon and Larpent's Primary French Translation Book; Robinson's Illustrated History of England, Period I., to 1660.

THE TEACHING OF SCHOOL HYGIENE TO STUDENTS IN TRAINING.

Dr. W. Leslie Mackenzie recently issued his report on the teaching of school and personal hygiene to students in training as teachers in Scotland. He says:

Briefly, the object of this course is to assist the teacher in discovering such gross mental or physical defects as may unfit, or tend to unfit, the child for school work. The teacher is not expected to become a doctor or to assume the functions of a doctor. All the lecturers on the laws of health have fully realized the object of the course, but each lecturer, as the special reports indicate, has followed his own method of attaining that object. At first there was a tendency to be satisfied with simply expository lectures. These were mainly compounded of elementary anatomy, physiology, and hygiene. There was little, if any, attempt to bring the students face to face with actual children, many difficulties standing in the way, but it was easy to give a course of general lectures. The results of this teaching were not satisfactory. The difficulties of finding subjects for demonstration have largely disappeared. In most of the centres selected schools are observed in groups and individually, and every student has an opportunity of testing directly the practical value of the knowledge acquired and of recording in detail the physical and mental conditions of one or more suitable children. It is, however, still necessary to say (1) that the systematic lecture, unsupplemented by concrete observation and practice, is not the most satisfactory method of conveying the information intended; (2) that there is a persistent temptation to include a large number of topics suitable only for written examinations; (3) that verbal descriptions of conditions or symptoms are of practically no value by themselves; (4) that such note-taking as may be necessary ought mainly to be descriptive notes of children actually observed at close quarters by the students; and (5) that the primary and essential thing is not the verbal reproduction of written or spoken descriptions, but the practical skill that comes of properly directed observation.

No doubt, within the conditions of school life, it is sometimes difficult at the moment to secure good material; but the experience of the last year has fully confirmed my early view that in any elementary school whatever there need never be any lack of subjects for demonstration. In almost all the centres the students have visited some schools. They have inspected classes in actual session. They have taken observations of prominent defects. They have recorded the conditions of ventilation, of temperature, of lighting, and of the furnishings of the rooms. But there have been considerable variations in the educative effects of these visits. In some cases the students showed little interest in concrete observations; in others the interest was extremely active. In some cases, too, the lecturer was rather apt to describe the conditions himself than to stimulate the students to record them. Where the laws of health form a part of the first year's course, the interest of students has been distinctly less; the quality of the written work has suffered, and there has been little enthusiasm. Some of these schedules I saw as they had been filled in by the students. The result was very gratifying. Occasion was systematically taken by the lecturer to discuss with the students the points observed. In this way the second-year students were enabled to apply the concrete knowledge gained in the previous year.

Instruction of the teachers in the laws of health I regard as only preliminary to a systematic medical inspection of schoolchildren. What the teacher can do is indispensable to the success of a system of medical inspection, but it is not a substitute for medical inspection. From his instruction in the laws of health the teacher acquires the habit of distinguishing for himself between the defects of inherited capacity and defects arising from morbid conditions. What tests of proficiency can we apply? If the instruction is mainly clinical, it is necessarily unsystematic; if it is to be systematic, it cannot, without great difficulty, be made clinical. The time allotted to the work in some of the colleges is not enough to enable a lecturer to make the course at once fully systematic and adequately clinical. To do this effectively it would be necessary to have at least an hour a week for a year. Written examinations, especially where the instruction is mainly clinical, are never a sufficient test. But this test has been supplemented in several cases by the exact clinical records of observation. This should always be reckoned as an element in making up the final marks. . . .

At the present stage it would be a mistake to stereotype the methods of instruction in this growing subject. From the il-

lustrations given it is obvious that there are many good ways of attaining to the same result. Much depends on the size of the classes, and much on the materials available for demonstration. Accordingly, I here content myself with general indications of what has been found practicable and profitable: but I may express the hope that, as time goes on and the general principle of the course is better understood, the methods of instruction will steadily tend towards observation of the concrete child and away from generalities, physiology, and the technical descriptions of anatomy. This is the only recommendation that I feel called upon to make. Doubtless, as the relations between the provincial Committees and the School Boards evolve into a smoothly working form, the lecturers will cease to have any difficulty whatever in procuring abundant clinical material.

REVIEWS.

Tacitus.

Tacitus and other Roman Studies. By Gaston Boissier, Professor of Latin Eloquence at the Collège de France, Perpetual Secretary of the Académie Française. Translated by W. G. Hutchison. (6s. net. Constable.)

The translation of Prof. Boissier's French has its difficulties, as well as the translation of Tacitus's Latin, but Mr. Hutchison has very successfully overcome them, though not unfrequently he retains a Gallicism in his rendering. He has done good service in presenting these penetrating and charming Studies to English readers. The treatment of Tacitus occupies about three fifths of the volume: the remaining portion is devoted to three subjects that serve more or less to elucidate points in the main thesis—"The Schools of Declamation at Rome," "The Roman Journal," and "The Poet Martial." Together the various Studies present in a popular yet none the less scholarly form a vivid picture of Roman life in the period under review. The work should be freely available to students of Tacitus, who will peruse it with eager interest by way of collateral illustration of the text. Mature readers, though finding occasional grounds of dissent or of hesitation, will acknowledge the fullness and mastery of the handling, the vividness of the objective presentation, and the abundance of thoughtful suggestion.

The study of Tacitus is divided into four sections. In the first chapter Prof. Boissier inquires how Tacitus became a historian, incidentally sketching his social surroundings, his education, his forensic success, and his political career. The inquiry is sufficiently difficult from the paucity of express information, and the conduct of it is an excellent example of the author's alert, cautious, and fruitful method of indagation. The second chapter is a close investigation of the conception of history in Tacitus. As a necessary preliminary, Prof. Boissier examines the conception of history before Tacitus, dealing at some length with Cicero's ideas on the subject, and remarking how Tacitus, though he nowhere gives formal expression to his views, yet unquestionably "displays great severity to the historians of the Imperial epoch and great favour to those of the Republic." His reconciliation of apparent contradiction between Cicero and Tacitus is ingenious, and very probably well founded. He examines with marked care the various sources of Tacitus's information, and concludes "that to reach the truth Tacitus has taken a great deal more trouble than is supposed." He cannot deny that there is rhetoric in Tacitus, and he notes the historian's special liking to draw up counter debates, a conflict of two antagonistic opinions argued in turn, suspecting "that in this matter we are confronted by a school habit which Tacitus had been unable to shake off"; but, he says, "those who are tempted to consider that at moments there is in those fine passages a little too much art and even artifice, a too obvious preoccupation with effect, some excess of theatrical setting, must not forget that Tacitus is presenting in action and speech his fellow-countrymen, to whom great emotional demonstrations were natural, and who readily displayed them." Tacitus "was by nature a marvellous artist: Racine calls him 'the greatest painter of antiquity,' and some of the pictures he left are among the finest surviving to us from ancient authors." Gravity, "perhaps the quality with which we are most impressed in reading Tacitus," came to him by nature, but it deepened from "the manner in which he conceived of history": "we must grasp, in reading him, that he comprehends the greatness of his mission." On this characteristic, Prof. Boissier introduces an interesting contrast with Suetonius; and he goes on to a further contrast with the modern conception of history, and remarks finally on the services rendered to us by ancient history:

> In its defects and its qualities, thanks to the striking beauty of the scenes which it describes, to its solicitude for simplicity, for harmony, for fine proportions, for perfection of form, to the part it devotes to morality, to the care it exerts in depicting exceptional beings as little as possible, and, though magnifying its great figures, leaving them that common basis of humanity which lets them remain in fellowship with us and, whilst dominating the multitude by their lofty stature, march in its midst: in all those elements we find the explanation of why it has proved so admirable an instrument of education. Since the Renaissance it has reared the entire youth of the civilized world. We are told that the charm is broken now, and that ancient history is being abandoned. I am not sure that those who say so are right, and I have my doubts whether our young people have grown so unresponsive as alleged to the fine recitals of Plutarch and Livy, which stirred their fathers. What I know and can affirm is this: that on the day when ancient history has disappeared from our schools there will be something lacking to them.

This is well said, in spite of the deductions that must be made from the general statement: we are not all Professors, or hearers of Professors, of Latin Eloquence in the Collège de France, nor have all our youth since the Renaissance been reared on the study of the ancient historians. The charm, however, is not broken, and it will no doubt operate as widely and beneficently in the future as in the past.

The third chapter discusses the "very rigorous" judgment of Tacitus on the Caesars. This involves an examination of the attacks that have been made on the veracity of Tacitus, and opens out a wide historical investigation. From the favourable reception of the works of Tacitus by his contemporaries, "that is to say, by the people who were in the best position to know the truth," and from the essential agreement of the later historians with him, "though they had the opportunity of consulting other sources than his works," Prof. Boissier believes "that Tacitus found opinion quite formed on the subject"—nay, he says, "it even seems to me that, instead of seeking to inflame it, as supposed, he rather attempted to keep it within bounds." There are interesting and instructive sections on Tacitus's pessimism, its advantages and its risks, the influence of his birth on his judgments, his debt to Greek culture, his prejudices, and his religious and philosophical views. The fourth chapter deals with his political opinions at different periods. But Tacitus, if we regard his work as a whole and not in a few isolated passages, "was in reality a moralist rather than a politician"—like the other Roman historians, though in a less degree; and it is Rome mainly that attracts him—as a rule, he is little concerned about the provinces. The historians as moralists are more interested in the crimes of the princes; the politicians place more emphasis upon their services to the State. Prof. Boissier sees no express contradiction or radical opposition; but, if a choice must be made, he ranges himself with those that rather incline to Tacitus. He concludes with some striking references to the use made of Tacitus at the epoch of the French Revolution, and especially his influence on Madame Roland and Camille Desmoulins. The three supplementary essays are full of learning and insight, and ought to be studied in connexion with the chapters on Tacitus.

Irish History.

History of Ireland, from the Earliest Times to the Present Day. By the Rev. E. A. D'Alton, M.R.I.A. In three Volumes. Vol. II.: from 1547 to 1782. (12s. net. Kegan Paul, Trench, Trübner, & Co.)

Mr. D'Alton continues his laborious and conscientious story of Ireland from the beginning of the reign of Edward VI. down to the struggle for legislative independence, thus covering a period of nearly two centuries and a half—"a period of storm and struggle and suffering."

The strife of race had become intensified and embittered by a strife of religion; for England had definitely cut herself off from Rome, and had even become one of the great champions of Protestantism, while Ireland still clung to the Catholic faith. Religious toleration had then made little progress. . . . Without making allowance for difference of racial temperament, the Englishmen of that time, as previously, thought that what was good for England was also good for Ireland. They regarded Irish customs as rude, the Irish language as a barbarous tongue, and the Irishman's religion—Catholicity—as superstition and idolatry. The people who clung to these deserved little mercy, and often got neither mercy nor justice; they were deemed unworthy of getting the

status of English subjects, as they were unworthy to be left in possession of their lands. And hence the Plantation of Ulster, the attempted confiscations of Strafford, the savageries of Cromwell, and the horrors of the penal laws.

The whole history does indeed show a deplorable lack of mutual understanding and sympathy; and Mr. D'Alton's next volume will exhibit a still reluctant and imperfect practical sense of the value of reasonable accommodation. About the middle of the sixteenth century, however, the conditions were sufficiently perverse: an ignorant, though by no means ill-meaning, English Council—"the clique of self-seekers and time-servers who made up the Privy Council at Dublin"; internal Irish divisions; and the insistent propagation of the reformed doctrines among a population that neither wanted them nor even understood them. The accession of Mary relieved the religious conflict, but "the whole country was more disturbed at the end of Mary's reign than at the beginning, and, if the limits of the Pale were enlarged, as they were, over its whole area, there was confusion." Irish dissension is vividly illustrated by the fate of Shane O'Neill, whose career is vigorously outlined; by the quarrels of Desmond and Ormond; and, later, by the experiences of Hugh O'Neill. Considerable space is devoted to the rebellions of Desmond and Tyrone, with numerous picturesque episodes. Mr. D'Alton waxes enthusiastic over Red Hugh:

In him the Irish lost their greatest leader: the greatest that had ever led them into battle or presided over their councils. Both Red Hugh [O'Donnell, of Tyrconnell] and Art MacMurrogh were daring chiefs; but the former wanted steadiness and patience, while the latter confined his efforts to Leinster alone. Unlike O'Donnell, O'Neill was cautious and foreseeing, laying his plans with care and refusing to be led by impulse or passion; and, unlike MacMurrogh, his activity extended to the whole country, and his purpose was to combine against the common enemy the scattered fragments of the nation's power. Had he been born a century earlier, he would probably have driven the English from Ireland, broken up the clan system, and erected a powerful monarchy on its ruins. In his own day, against the whole forces of England, he all but succeeded; and failed only because of the universal treachery which surrounded him—a treachery so appalling, so shameful, that, except O'Donnell and Maguire, there was not one on whom an honest man could rely, none that was not a trickster or a cheat. Amid such leaders he towers as does the Pyramid over the plain. Later ages were not slow to recognize his worth; and in seasons of stress and storm his countrymen sought, but they sought in vain, for another Hugh O'Neill.

The Plantation of Ulster, "more thorough, more sweeping, more complete than any which had yet been attempted," was not accomplished without much injustice and much cruelty, and in many ways it proved a sowing of dragon's teeth. Strafford's attempt to plant Connaught, together with his trampling on the rights of the people, widened the area of disaffection. The rebellion of 1641, stiffened by the Confederation of Kilkenny, fanned by the Papal Nuncio, and eventually countered by Cromwell and Ireton, kept the country in disastrous welter for a dozen years. Mr. D'Alton describes carefully and pointedly the Cromwellian Settlement, "which, instead of settling, unsettled everything; laid deep and permanent the foundations of class hatred and sectarian animosity; still further embittered the relations between two races; and founded a land system which has been the despair of Governments and statesmen, and which, more than two centuries later, in the interests both of England and Ireland, it has been found necessary to destroy." More persecution of Catholics, followed by alternate exasperation of Protestants, continued to keep the country in turmoil, till the complete subjugation of the old race and the establishment of Protestant ascendency by William—a portion of the narrative which is set forth with great spirit, lucidity, and moderation. The remaining chapters deal with the penal laws, the Irish abroad, writers and schools, and the Parliamentary struggle. Mr. D'Alton never loses sight of the condition of the people in the midst of the political and military bustle. The work is very able and extremely interesting. There are fourteen excellent maps and plans.

A French Study of English Literature.

A Literary History of the English People. Vol. II.: *From the Renaissance to the Civil War*, I. By J. J. Jusserand. (12s. 6d. net. T. Fisher Unwin.)

The first volume of this history (a second edition of which has just been announced by Mr. Fisher Unwin) was received with general applause of M. Jusserand's erudition, critical judgment, and literary deftness; and, if there be constancy in the critics, the same characteristics should evoke similar approval of the present volume. It contains two Books—Book IV., dealing with the Renaissance and the Reformation, and Book V., the larger half, occupied with the Age of Elizabeth. M. Jusserand sketches the origins and the spread of the Renaissance in Europe; describes the beginnings of printing, the labours and ideas of Caxton, and the diffusion of printing in England; and then traces in various main lines the development of the Renaissance in England—the tastes of Henry VIII. and Wolsey, the royal invitation to foreign artists and writers, the studies of the schools, the printing, translation, and diffusion of the classics, the devotion to modern languages (English included), archæological researches, programmes of aristocratic education, and the general spread of knowledge. Sir Thomas More is the centre of humanism in England: he has evidently attracted in a special degree the author's interest and admiration; and the frontispiece of the volume is a reproduction of Holbein's pen-and-ink sketch for his picture of More and his family, still preserved in the Basle Museum. "The laugh of Erasmus is cruel; the smile of More is mingled with pity." Then M. Jusserand reviews the progress of English, in prose and in poetry, with considerable attention to the Scots poets of the time. He seems less than justly appreciative of Dunbar, perhaps to some extent by way of reaction against the exaggerations of recent admirers. "England has studied; she has perfected her stock of tools, improved her methods; but this England of the renewal has produced nothing as yet—nothing but a little nosegay, well arranged, very small, a single bunch which is being passed from hand to hand." The sections on the Reformation are mainly political and religious (or ecclesiastical), the principal exception being an account of the spread of the Bible in the earlier translations. "What neither Latimer's sermons, nor Cranmer's articles, nor Henry's and Somerset's destructions of monasteries, nor the reading of the Bible, nor the old Church's inveterate abuses had been able to do Mary's executioners did. . . . The cause of the Reformation, which seemed lost at the accession of Mary, was thus won by the martyrs."

About three-fifths of the volume is devoted to the Age of Elizabeth. The author depicts the chief characteristics of the period: "the multiplicity of interests aroused, of aspirations, curiosities, and studies, manifested by explorations of the material world, and of the scientific and literary worlds"; "a national pride and a passion for the motherland which cause her children to venerate and admire, or at least to minutely describe, everything that is hers"; "a lyric power developed to an incomparable degree, so universal that its marvels are found everywhere, in the right place or the wrong"; "the gift of material and moral observation, also widely distributed, sometimes combined with the preceding one, the result being a lyricism which is linked to the earth, and is thereby more human"; and, "finally, and affecting all the rest, a fecundity, a word power, an activity which pass belief." "The period is one of ever-ready poets, handling all subjects, in every style, animating the manifold personages of innumerable dramas full of exuberant life (actions represented: a delight for this busy, action-loving public), singing the past, the present, their amours, the glories of their nation, the praises of God." M. Jusserand analyses at great length and with obvious interest the character and career of Elizabeth, probably not at all points to the satisfaction of English readers. "Never was there simultaneously a situation more difficult and a character better adapted to it. The concordance is so perfect, so singular, that it seems almost a miracle, a 'lusus naturae.' . . . A great heart, a great mind, a great character, certainly not—a great Queen, yes." The other chapters of this Book deal with various forms of prose and poetry down to Spenser, Spenser and his works, and the Novel. The analysis of "The Faerie Queene," for all the praise of Spenser, yet has elements that may again provoke dissatisfaction. "Nothing so contradictory as men's judgments. A modern writer, perfectly sincere and of the highest merit, ends his criticism of 'The Faerie Queene' by saying it is 'an armour for the soul.' But we, unfortunate beings, who, for our demerits doubtless, have not been touched by grace, dazzled as we are by all those wondrous sights and delighted by the music of the verse, but fatigued by so many inconsistencies, by this mixture of bacchanals and sermons, with so little allowed for human tenderness, we feel as if we could not breathe. . . . Ten lines of Langland's Visions are worth more than all the moral in 'grave morall Spenser's' seventy-two cantos." The value of the work, however, seems to us to lie in its broad and vivid presentation. The details may be found, in more or less sufficiency, elsewhere; what is fresh here is the distinctive and detached attitude,

the vision of an alert, full, and fruitful mind, an imaginative capacity for dramatic presentation in close consonance with the facts, and a style of remarkable vigour and lucidity. This is not a suitable case for an enumeration of petty blemishes or for quarrelling over an occasional difference of opinion. It is the breadth of handling, the wealth of illustration, the vivid depiction and characterization, and the general movement of the narrative that are the essential considerations. It is a work of marked ability and industry; it is also a work of art—and of genius.

GENERAL NOTICES.

ENGLISH LITERATURE.

English Literature from the Norman Conquest to Chaucer. By William Henry Schofield, Ph.D., Professor of Comparative Literature in Harvard University. (7s. 6d. Macmillan.)

In this work, which another volume will carry down to Elizabeth, Prof. Schofield has ably taken the place of the Rev. Stopford A. Brooke, who was unfortunately prevented by ill-health from treating the subject for the series, and whose recommendation of a substitute has been amply justified. The present volume follows in general outline the plan of Gaston Paris's history of Old French literature; and it is another interesting literary connexion that it was undertaken "with the warm encouragement of my revered master, Gaston Paris." Prof. Schofield has judiciously adopted the plan of bringing together all writings of one kind and tracing separately the evolution of each type; for they "are in large part anonymous in composition, impersonal in expression, international in currency, and static in type." The second volume will naturally follow the usual personal arrangement and handle particularly the chief writings of prominent authors. Prof. Schofield now treats of the period down to the birth of Chaucer, including, however, such later productions (romances, legends, &c.) as are written in early mediæval styles. He deals in order with Anglo-Latin Literature, Anglo-Norman and Anglo-French Literature, Romance, Tales, Historical and Religious and Didactic Works, and Songs and Lyrics. The largest space is properly assigned to the department of Romance, "without doubt the most comprehensive and significant division of mediæval vernacular literature." A luminous introduction is prefixed, and elaborate chronological and bibliographical lists, as well as an index, are appended. The volume is attractively written, and will form an agreeable and trustworthy guide to portions and aspects of English literature that are ordinarily awarded but scant attention in histories, but yet are important for a just appreciation of the literary development.

The Oxford Treasury of English Literature. Vol. II., *Growth of the Drama.* By G. E. Hadow, Tutor in English Literature, Lady Margaret Hall, Oxford, and W. H. Hadow, Fellow of Worcester College, Oxford. (3s. 6d. Clarendon Press.)

Being intended as a companion to the study of Shakespeare, this volume is disposed in three divisions—Tragedies, Comedies, and Histories—each containing six representative pieces, curtailed here and there, the action of the omitted parts being supplied in summary. The plays given run from 1581 to 1634, from Lyly to Ford. Shakespeare himself is not represented, the suggestion being that one or two of his plays should be read with each of those here chosen from contemporary writers. As in the first volume, the illustrative pieces are few and long, rather than brief and numerous; there is enough of each to show its general plan and purport. Taken together, they indicate effectively the main stages of the growth of the English drama. The historical and critical sketch prefixed to each play is always fresh and pointed, and will be most helpful to the student or the general reader. The plan has been carefully thought out and admirably executed.

Collins' "Handy" Modern Fiction. (7d. net each volume.)

The first four volumes are (1) "The Great Refusal" (Maxwell Gray), (2) "The Brown Eyes of Mary" (Mme. Albanesi), (3) "The Secret Woman" (Eden Philpotts), and (4) "The Golden Butterfly" (Besant and Rice). They are printed in clear bold type; each has a coloured frontispiece, and a title-page specially drawn for the series; and they are nicely bound in cloth, with gold back. The form is very handy, and the get-up is agreeable and substantial. As for the matter, "every book carries the hall-mark of success." The price is amazingly low.

Nelson's Library. (7d. net each volume.)

We have six specimens: (1) "Robert Elsmere" (Mrs. Humphry Ward), (2) "Quisanté" (Anthony Hope), (3) "Incomparable Bellairs" (Agnes and Egerton Castle), (4) "David Grieve" (Mrs. Humphry Ward), (5) "The King's Mirror" (Anthony Hope), and (6) "John Charity" (Horace Annesley Vachell). Regarding this series, we would simply repeat what has just been said about Messrs. Collins's series. Evidently the public are going to benefit by the enterprise of the publishers. A good modern novel, beautifully printed and agreeably bound, and convenient for the pocket—all for 7d. It would be incredible were the proof not before us.

CLASSICS.

(1) *The Republic of Plato.* Translated into English, with an Introduction, by A. D. Lindsay, M.A., Fellow of Balliol College, Oxford. (7s. 6d. net. Dent.) (2) *The Pocket Plato.* Edited (from Jowett's translation) by S. C. Woodhouse, M.A. Oxon. (2s. 6d. net. Routledge. Wayfaring Books.)

(1) Mr. Lindsay has executed a difficult task with notable care and success. There are many translations of Plato's famous treatise, varying in fidelity and literary charm, but there is none that represents the text so faithfully as this; and, if Mr. Lindsay's style is plain and unadorned, it is also lucid and agreeable. Altogether, it is the best translation we know, and we commend it to the general reader as well as to the student. The Introduction consists of some pointed and useful observations on the form of the work, followed by an instructive analysis of the argument. (2) Mr. Woodhouse's volume consists of a selection of passages on some seventy subjects from the various dialogues, in Jowett's translation. It is in handy form, and is very agreeably got up.

T. Macci Plauti Mostellaria. Edited by Edward A. Sonnenschein, D.Litt. Oxon., Professor of Latin and Greek in the University of Birmingham. Second Edition. (4s. 6d. Clarendon Press.)

It is twenty-two years since the publication of the first edition, and now Prof. Sonnenschein has entirely recast the work, in order to bring it into accordance with results of Plautine criticism in recent years. Happily his long experience has satisfied him that a conservative view of the MS. readings is the wisest; and he gives a very considerable number of critical notes, which will interest and instruct the more advanced student. The explanatory notes are very full and extremely good: naturally Prof. Sonnenschein seizes the opportunity to emphasize views he has at heart about moods and tenses. He has deliberately reserved the discussion of vexed questions of metre and prosody, referring meantime to his able article in the *Classical Review* ("Accent and Quantity in Plautine Verse," 1906, Vol. XX., pages 156–9), and promising a separate work on the subject, which he has had in hand "for many years." The text is interleaved. The book is a model of scholarly treatment.

Translations into Greek and Latin Verse. By Sir R. C. Jebb, Litt.D., O.M., late Regius Professor of Greek in the University of Cambridge. Second Edition. (7s. 6d. net. Cambridge University Press.)

A sumptuous volume, containing the forty-three passages of the volume of 1873, with a few corrections and considerable additions. Every classical scholar will be delighted with this admirable collection of fine work by a master in classical scholarship and literary taste.

MATHEMATICS.

Five-Figure Mathematical Tables. By A. du Pré Denning, M.Sc. Birm., B.Sc. Lond., Ph.D. Heid. (2s. net. Longmans.)

In the early pages of the work a successful attempt has been made to combine full information with economy of space and at the same time to avoid the appearance of overcrowding. The object is attained partly by reproducing the complementary portions only of the tables of logarithms and antilogarithms (those portions of each being omitted for which the successive differences are large) and partly by a careful selection of type. When, however, the trigonometrical tables are reached the success of the effort is no longer felt; the pages look cramped and the headings of one sheet are made to serve for a subsequent one, defects both of which may prove sources of inconvenience and even of error. The work has evidently been compiled with great care, although a comparison with older results does not always show complete agreement between the two sets. Some useful physical tables are introduced, and at the commencement of the volume will be found a section describing, generally without explanation, the method of using the various tables given later.

A Rhythmic Approach to Mathematics. By Edith L. Somervell. With a Preface by Mary Everest Boole. (2s. 6d. net. Philip.)

This little volume both as regards text and preface is very interesting. It is intended more especially for the guidance of those who are engaged in the training of young children and who are about to use certain series of cards invented for kindergarten purposes. The object in view is to awaken a sense of the relationship between number and form and movement and the process of thought, whilst the means employed is the intelligent sewing of straight lines in successive positions, giving as results the curves which, mathematically speaking, are the envelopes of the groups of lines. The advocates of the system claim for it, firstly—and there seems to be a real foundation for the claim—that it forms a very powerful first course in mathematical education and paves the way for the child in later years to realize and to assimilate readily the truths of advanced mathematics; secondly, they find that the occupation of embroidery in wools or silks of various colours, and on a plan which leaves unfettered the imagina-

tion of the children, tends to induce a keen feeling for the harmony of colour and to foster a taste for and a power in original geometrical design. The little book is profusely illustrated, and we learn from it that many of the most elaborate amongst the patterns shown in its pages have been invented by young pupils at a comparatively early stage in their training.

A School Algebra Course. By F. Gorse, M.A., Head Master of the Intermediate School, Bootle. (3s. Cambridge University Press.)

"If the pupil is provided with suitably graduated exercises," says Mr. Gorse, "the more he is left, under the guidance of his teacher, to discover facts and principles, to construct his formulæ, and to make his own way, the more valuable the training, general as well as mathematical." True—so far. The volume accordingly consists of questions, problems, and examination papers, without explanations. There is some rearrangement: but, if the first four rules, H.C.F. and L.C.M., squared paper, and graphs are to be postponed to logarithms, it seems scarcely worth while to give them at all. There is little relevance in the plea that "much time is usually spent in the mechanical performance of operations which are not understood, and in working with symbols which convey no meaning." But the work is most careful, and it will be of very great practical use. Answers are appended.

MODERN LANGUAGES.

The Philosophy of Goethe's Faust. By Thomas Davidson, LL.D. (Harv.). Edited by Charles M. Bakewell. (3s. net. Ginn.)

All students of "Faust" will feel deeply indebted to Mr. Bakewell for presenting in permanent form "the interpretation of Goethe's masterpiece by a scholar of Mr. Davidson's breadth and learning who had lived long and intimately with it." The slim volume consists of six lectures, first delivered in the winter of 1896 at Cambridge (Massachusetts). Dr. Davidson believed that the content of the poem "is the entire spiritual movement toward individual emancipation, composed of the Teutonic Reformation and the Italian Renaissance in all their history, scope, and consequences." The exposition is distinguished by insight and lucidity as well as learning, and it will be most instructive to every student of the work. It may surprise some that Dr. Davidson was "of the opinion that, taken as a whole and re-regarded as the working out of a great moral problem, 'Faust' is a distinct failure"; that "its conclusion is utterly lame, and in no sense the logical or even the æsthetic outcome of the action of the play." Though "the parts, as parts, are interesting, and dimly suggest wonderful wholes," yet "the patchy whole (das geflickte Ganze) is a nondescript monstrosity which solves no problem and leaves only a vague and unsatisfactory impression on the mind." Dr. Davidson finally states what he thinks the solution ought to have been, and what the solution as historically worked out really is. An extremely able, mature, and suggestive work.

Methodik des Unterrichts in der deutschen Sprache. Von Adolf Schultz, Rektor in Berlin. (Mk. 3 (geheftet). Teubner.)

The volume belongs to an important series on "Methodik des Volks- und Mittelschulunterrichts," "in Verbindung mit namhaften Schulmännern und unter Mitwirkung des Geh. Regierungsrats E. Friedrich herausgegeben von Herm. Gehrig." Dr. Schultz laments an unfortunate confusion of opinions in Germany upon the method of teaching German, such as is not unknown among ourselves on the teaching of most subjects. Indeed he says: "Nicht in einem einzigen Zweige des Unterrichtsgebietes ist auch nur annähernd jene allgemeine theoretische Übereinstimmung vorhanden, die eine gesunde praktische Ausübung gewährleistet; alles ist Meinung, alles ist Welle in der Sintflut methodischer Erörterungen durch Kritik und Gegenkritik." In a sense, there should be some comfort for us in this frank admission of German puzzlement. Dr. Schultz is conservative and practical. He holds by what has been proved good in the older practice, rejects the obsolete, welcomes what seems sound in the newer notions, and aims at welding the selected principles into an organic whole. The work is disposed in five sections: (1) Psychologisch-methodische Einführung; (2) Allgemeine Methodik; (3) Besondere Methodik; (4) Historische Entwickelung der selbständigen Disciplinen des Unterrichts in der deutschen Sprache; and (5) Literaturnachweis für sämtliche Zweige des Unterrichts in der deutschen Sprache. The treatment is detailed and systematic, with ample command of pedagogic history; and the style is very readable. A considerable "Sachregister" is usefully appended.

A GOOD ENGLISH DICTIONARY.

Webster's Collegiate Dictionary. (12s. net. Bell.)

The aim of the work is "to present the most essential parts of Webster's 'International Dictionary' in a compact and convenient form, suited to the general reader and especially to the college student." Evidently great labour and great judgment have been applied to reproduce in the new form the pith and marrow of the famous lexicon. There are more than 1,100 pictorial illustrations, intended not for display, but for elucidation. Preceding or following the vocabulary are a number of tables and treatises on subjects immediately pertinent. The conception of the publishers and editors has been most competently worked out; and the result is an admirable dictionary for ordinary school and business use, clearly printed, easy to handle, and strongly and flexibly bound.

EDUCATION.

Sonnenschein's Cyclopædia of Education. Arranged and Edited by Alfred Ewen Fletcher; Revised by M. E. John, formerly Head Mistress of Barrow Hill School for Girls. (2s. 6d. net. Swan Sonnenschein.)

This is really the third edition thoroughly revised. A good deal of new matter has been added, at a sacrifice of some articles of less practical importance. New educational movements and theories have claimed notice, and additional biographies of eminent educationists have been incorporated. A select bibliography, of considerable extent, and conveniently classified, is appended. The volume is a remarkably good compilation for the space, and the price is now amazingly low.

We welcome the new edition (the fourth) of *The Education Authorities Directory* (2s. 6d. net, postage 3d. extra)—No. IV. of "The School Government Handbooks"—issued from the office of the *School Government Chronicle* (21 New Bridge Street, E.C.). It has been revised down to the middle of May, and a considerable amount of convenient information has been added. It is a very useful book of reference.

The Handbook of Education, by J. H. Yoxall, M.A., and Ernest Gray, M.A., Officier de l'Instruction publique (3s. 6d. net, postage 4d. extra. N.U.T., Bolton House, Russell Square, W.C.), supplements the N.U.T. edition of the Code and the "Companion to the N.U.T. Code," so that the three works together may be regarded as fully descriptive of the machinery of popular education throughout England and Wales. The work contains an elaborate array of particulars regarding the supply, organization, and administration of elementary and secondary education, the compilation of which must have been an exceedingly difficult task. Thus the section on Higher Education sets out the list of Higher Schools in alphabetical order of counties, with parallel columns showing number of pupils [(*a*) under 12, (*b*) 12 to 16, (*c*) over 16], number of teachers (resident or regular, and visiting or taking special subjects), qualifications of staff, government, annual fees, endowments, and annual grants (from Local Education Authority, or from Government, 1905); the curricula and scholarships being given in a subsequent sub-section in the same order. The section on Secondary Education presents in parallel columns the appointing and dismissing authorities, eligibility (or otherwise) for pension, and teachers' annual salaries. Many sections are devoted to the various matters of interest to teachers and others. A most comprehensive and valuable work of reference.

The Girls' School Yearbook (Public Schools), with the Index of Schoolmistresses, appears in its second year, with fresh additions (2s. 6d. net. Swan Sonnenschein). The first part sets out the schools in alphabetical order, with all details likely to interest the public and the profession, and with a good many illustrations. The second part is concerned with the future career of girls, and gives copious particulars of various professions and openings for them. The information is very full and serviceable. We wish the work continued success.

RELIGIOUS AND MORAL.

The Origin, Constitution, and Destiny of Man, according to Science and the Bible. By the Rev. Wm. Hendy Cock, L.C.P., F.G.S., B.Sc. Lond., Science Tutor and Assistant Chaplain, the Training College, Exeter, and Mathematical Tutor for Higher Mathematics of N. C. College. (6d. Exeter: Pollard.)

Mr. Cock's plain and earnest exposition is now presented in a second edition at a popular price. The object is "to put before the public the true relation between Science and the Bible" and "to elucidate some problems which unnecessarily sometimes cause doubt and worry to anxious and earnest seekers after truth." Unnecessarily? Mr. Cock hardly appreciates intellectual difficulties, and inclines to dismiss them somewhat lightly: the critical element might be strengthened with advantage. By all means "let us be careful in reading the works of the higher critics and others who mutilate the sacred text to try to bring it into harmony with what others think to be true," but let us also realize the standpoint, the scope, and the true value of the "higher criticism"; and by all means "let us remember what our faculties are and what the Bible is, and so learn faith, humility, and patience." The volume will no doubt continue to exercise a wide influence. The design on the cover is not cheerful.

The Substance of Faith allied with Science: a Catechism for Parents and Teachers. By Sir Oliver Lodge, F.R.S., Principal of the University of Birmingham. (2s. net. Methuen.)

"I have attempted," says Sir Oliver Lodge, "the task of formulating the fundamentals, or substance, of religious faith in terms of Divine Immanence, in such a way as to assimilate sufficiently all the results of existing knowledge, and still to be in harmony with the teachings of the poets and inspired writers of all ages. The statement is intended to deny nothing which can reasonably be held by any specific Denomination, and it seeks to affirm nothing but what is consistent with universal Christian experience." The task is no doubt "singularly difficult"; and the author foresees that "to obtain general acceptance for such a production may be impossible," for "it is not

possible to satisfy both scientific and distinctively denominational requirements," whatever one may do in regard to what "can be reasonably be held by any specific Denomination." The volume must be left to the pronouncements of the theologians and the philosophers: we should not be surprised if it suffers severely at the hands of both classes of experts. Sir Oliver, however, properly reminds his readers that "a creed or catechism should not be regarded as something superhuman, infallible, and immutable; it should be considered to be what it really is—a careful statement of what, in the best light of the time, can be regarded as true and important about matters partially beyond the range of scientific knowledge."

SOCIAL QUESTIONS.

The Case for Women's Suffrage. Edited by Brougham Villiers. With Contributions by fifteen other Writers. (2s. 6d. net. Fisher Unwin.)

"Place aux dames!" The writers expound the burning question in all its aspects—theoretical and practical, civic and legal, historical and international—with full information and in agreeable style. But how comes it about that "420 members of the present Parliament are definitely pledged to Women's Suffrage," and yet the Women's Enfranchisement Bill does not go through the Commons even? How is it that, while "Balfour and Campbell-Bannerman both declare that the measure is right and just," Mr. Israel Zangwill, who prides himself on having been the first man to maintain that the Suffragettes had proved that they understood how to make British politics, yet declares, in choice and picturesque language, that "woman between the Conservatives and the Liberals is like the donkey who starves between two bundles of straw"? It has been left to a teacher (Mr. R. F. Cholmeley) to put his finger on "the most important question that the supporters of Women's Suffrage have to consider"—"What are the right tactics for them?" It is well to have the case put forward authoritatively in a convenient volume.

"The Social Problems Series."—(1) No. II., *The Housing of the Working Classes.* By the Rev. M. Kaufman, M.A. (2) No. III., *Trade Unionism.* By Richard Bell, M.P. (1s. net each. Jack.)

Both authors are well known authorities on their respective subjects. Mr. Kaufman has worked into his chapters the best of the available information and experience gathered both at home and abroad, and he has sought to give more light rather than to foster emotional fervour: in a word, he is solidly practical. He deals not only with town slums, but with "deserted villages" and cottages in or near towns; he reviews the history of the movement, dwells on helps and hindrances, and points out what remains to be done; and he gives separate chapters to the problem in Germany, France, and Belgium. The lion in the way is the financial difficulty; "but, great as is the power of money in the solution of the housing question, greater still is the importance of mind, the force of ideas and ideals, high aims, and the power of accurately calculating means to an end." Mr. Bell offers "a brief history of the inauguration, progress, and development of Trade Unions." He is not long, however, in reaching the Taff Vale case (1901), which he sets out at some length, mainly by giving the House of Lords judgment; and the second half of the volume discusses the objects and policy of the Labour movement from the trade union standpoint. Both volumes are handy, opportune, and serviceable.

MISCELLANEOUS.

Messrs. John Leng & Co., Dundee, have just issued Part I. of *Bonnie Scotland* (7d. net). The work will be completed in 20 Parts, containing 400 spacious photographs (10 in. by 8 in.), with appropriate historical and descriptive letterpress. The excellence of the pictures is guaranteed by their being reproductions from the well known photographs by Valentine, and they have been capably printed by Messrs. R. & R. Clark, of Edinburgh. Lord Strathcona furnishes a patriotic preface, and the series will appeal strongly to Scotsmen and to others as well. The first Part is comprehensively varied and typical. The work promises to be very interesting and effective.

The "Eureso" Mark Book for private and public schools has been compiled by Charles M. Parks, B.A. (2s. 6d. net. Relfe.) It gives room for thirty names on a page, and is clearly arranged. Messrs. Relfe also publish *The "Eureso" Preparation Book*, designed for one term, a week at an opening. Both books will be very serviceable.

The MacPeever Wrangles, by A. P. Macdonald (6d., Leng), is a series of a dozen—a baker's dozen—papers reprinted from the *People's Friend*, depicting the humours of a worthy Scottish couple, who "are apt to go to extremes—opposite extremes—in most things, like other married couples here and there." The sketches are remarkably well done, and amusing to those that understand the idiosyncrasies of the characters and their language.

"Composition," said the little schoolgirl, "is the art of bringing simple ideas into complication." In *Humour of Bulls and Blunders* (1s. net, Gay & Bird) Mr. Marshall Brown has brought together a large and amusing assemblage of simple ideas in complication. The "Educational" section is sandwiched between "Better left Unsaid" and "Epitaphs." We do not remember a more genuinely entertaining collection of the kind. Mr. Brown points out, truly enough, if superfluously, that, "while it is designed primarily to amuse, the volume has an instructive value in suggesting the importance of clearness of expression and simplicity of style."

A Simple Explanation of the Workmen's Compensation Act, 1906, published by Messrs. W. Speaight & Sons (Fetter Lane, E.C.) at the popular price of one penny, should be useful alike to employer and employee.

Letters to Young Rugby Football Players, by XVIth Man (1s. net, Blackie), are written in crisp and vigorous style, and convey full information and admonition with masterly competence. The little volume should be in the hands of all young—and other—players.

The Holiday Whitaker—summer edition (1s., Whitaker, 12 Warwick Lane, E.C.)—arrives opportunely. It is "an illustrated guide to the holiday and health resorts in the United Kingdom," telling people where to go, how to go, where to stay, what to see, and what to do. It runs to some 400 pages, and has over 250 illustrations, and it is readable and businesslike throughout. Special sections are devoted to various matters of holiday interest.

"Nowhere probably in the British Isles is there a spot better suited to be the headquarters of a summer holiday than the bright little town of Dunoon."—So says Mr. George Eyre-Todd, who, by way of interlude in the study of Scottish literature, has written *Dunoon and the Coasts of Clyde*, a charming "official guide," published by the Town Council of Dunoon (3d.). Historical information, rambles, and excursions by coach and by steamer: what more can the tourist need? The illustrations are numerous and good.

Under the title of *The Great Point at Issue* Messrs. Probsthain publish the speech on the Agrarian Question delivered in the Duma (May 10) by Mr. P. A. Stolypin, Prime Minister of Russia (1s.).

Messrs. Kelly & Sons (Water Street, Arundel Street, Strand, W.C.) offer a Rule, 2 ft. long and $1\frac{1}{2}$ in. wide, on which are marked the various sizes of the folded pages of printed books with cut edges—a substantial, handy, and useful device.

FIRST GLANCES.

CLASSICS.

Deutsche Schulausgaben. (1) Sophokles Antigone, übersetzt von Johannes Geffcken und Julius Schultz. Mk. 0.60. (2) Homers Odyssee in Auswahl nach der Übersetzung von Johann Heinrich Vosz; für den Schulgebrauch herausgegeben von Dr. Georg Finsler, Rektor. Mk. 0.80. Teubner.

[Good German readers; also interesting collateral studies for such classical pupils as can read easy German.]

Dona Reginae, and other Latin Scenes for acting. By B. Orange, late Classical Mistress at St. Margaret's, Polmont. 4d. Blackie.

[Pleasant and clever.]

Latin Texts, Blackie's. (1) Caesar, Gallic War VII., edited by W. H. D. Rouse, Litt.D. (2) and (3) Virgil, Georgicon III. and IV., edited by S. E. Winbolt, M.A. 6d. net each.

Memorabilia Latina: Selected Notes on Latin Grammar. By the late F. W. Levander, F.R.A.S., Assistant Master, University College School, London. 1s. Bell.

[New edition, revised. Very useful.]

Pitt Press Series. (1) Euripides, The Heraclidae. Edited by A. C. Pearson, M.A. Cantab., formerly Assistant Master in Dulwich College. 3s. 6d. (2) Demosthenes, Philippics I., II., III. Edited by Gilbert A. Davies, M.A., late Fellow of Trinity College, Cambridge, Professor of Greek in the University of Glasgow. 2s. 6d. Cambridge University Press.

[Introductions, notes, &c., excellent.]

Robinson Crusoe, The Story of, in Latin. Adapted from Defoe by G. F. Goffeaux; edited, amended, and rearranged by P. A. Barnett, M.A. Oxon. 2s. Longmans.

[Very interesting. Good collateral reading.]

Vergilii Musa Consolatrix: The Virgil Pocket Book. Arranged by S. E. Winbolt; with an Introduction by Arthur Sidgwick. 2s. net. Constable.

[Classified excerpts (brief)—memorable passages, with translation opposite. Delightful little volume.]

MATHEMATICS.

Arithmetic, Murray's School. By A. J. Pressland, M.A., F.R.S.E., formerly Scholar of St. John's College, Cambridge, Master at the Edinburgh Academy. 2s. 6d. Supplementary Exercises. 6d. Murray.

["For pupils between the ages of 10 and 17." An original set of questions developed in twenty years' teaching practice: "a deliberate attempt, continued for many years, to solve the difficulties that have accumulated round the teaching of arithmetic." Excellent. The "Supplementary Exercises" contain examples for home work and notes on method. Answers (both volumes).]

Arithmetic, Pitman's "Method." 3s. Answers, separately, 2s. 6d. net. [The "Parts" previously published now collected.]

Arithmetics, McDougall's "Suggestive." Book V. 4d.

Arithmetics, Pitman's "Proficiency." Parts I. to IV. 2d., 2d., 2d., 3d. Answers to Parts II. and IV., separately, 3d. net.

["A rearrangement of the Method Arithmetics (in Scheme B order) to meet the requirements of Schedule VI. of the Code of 1906."]

Geometry and Physics, A First Year's Course in. By Ernest Young, B.Sc., Head Master, Lower School of John Lyon, Harrow. Parts I. and II. 1s. 6d. Bell.

["Part I. furnishes a combined course in Geometry and Physics. Part II. contains the second and third terms' work in Geometry. Part III. will contain the second and third terms' work in Physics."]

Geometry, Elementary. By Cecil Hawkins, M.A., Senior Mathematical Master at Haileybury College. New Edition. 3s. 6d. Blackie.

[Straight Line, Circle, and Plane Rectilineal Figures. "Sundry important modifications" in the light of actual experience in working with the book.]

English Literature.

Boswell's Johnson. Edited, with Notes, by Roger Ingpen. Part I. 1s. net. Pitman.

[Complete in 12 monthly parts. 1,152 pages, with some 400 illustrations and 12 photogravures. Very elaborate.]

Everyman's Library. No. 197A: An Atlas of Ancient and Classical Geography, with full Index. No. 217: Ruskin's Elements of Drawing and Elements of Perspective. No. 218: Ruskin's Pre-Raphaelitism and Lectures on Architecture and Painting. Introduction by Laurence Binyon. No. 219: Ruskin's Sesame and Lilies, The Two Paths, and The Golden River. Introduction, "of the most simple character," by Sir Oliver Lodge. 1s. net each. Dent.

[No. 197A consists of 27 maps, 11 ins. by 6 ins. It is a revised and enlarged edition of the well known atlas by Dr. (afterwards Bishop) Butler. Specially accommodated to Grote and Gibbon. The Ruskin volumes have illustrations and diagrams. Agreeable and valuable edition.]

Golden Poets.—(1) Herrick, selected and introduced by Canon Beeching. (2) Keats, selected and introduced by Arthur Symons. (3) Tennyson, selected and introduced by Prof. H. J. Grierson. (4) Byron, selected and introduced by Charles Whibley. 2s. 6d. net each. Jack.

[Each volume has frontispiece and title by A. S. Hartrick and coloured illustrations by various esteemed artists. Convenient and attractive edition.]

Nelson's Sixpenny Classics.—The Channings (Mrs. Henry Wood).

Shakespeare, The Greater Plays of: King Henry VIII., A Midsummer Night's Dream, King John, Macbeth, Twelfth Night, Hamlet, and King Lear. 4d. each. Blackie.

[Beautiful print; strong and tasteful get-up.]

The World's Classics.—(1) Margaret Catchpole (Cobbold), with Introduction by Clement Shorter. (2) The New Spirit of the Age, edited by Richard Hengist Horne, with Introduction by Walter Jerrold. (3) Aristophanes—Four Plays translated into English Verse by John Hookham Frere, with Introduction by W. W. Merry, D.D., Rector of Lincoln College, Oxford. (4) Poems of George Herbert, with Introduction by Arthur Waugh. (5) Great Expectations (Dickens), with 6 illustrations by Warwick Goble. (6) The Town (Leigh Hunt), edited, with Introduction and Notes, by Austin Dobson. 1s. net each. Henry Frowde.

[(4) to (6) are in the "Pocket" edition, especially convenient for holiday-makers and travellers and otherwise in view of limitations of space. Charmingly got up in tasteful limp cover.]

Education.

Board of Education. (1) Regulations for Technical Schools, Schools of Art, and other Schools and Classes (Day and Evening) for Further Education (1907–08). Cd. 3555. 2d. (2) The Building Regulations (Public Elementary Schools). 2d. (3) General Report on the Instruction and Training of Pupil-Teachers, 1906–07; with Historical Introduction. 7s. 8d. (4) Code of Regulations for Public Elementary Schools in England. Cd. 3594. 3d. (5) Result List of the Preliminary Examination for the Elementary School Teachers' Certificate. 1907. 6d. (6) Regulations for Secondary Schools (in force from August 1, 1907). Cd. 3592. 2½d. (7) Regulations for the Preliminary Education of Elementary School Teachers (in force from August 1, 1907). Cd. 3444. 3d. (8) Short Courses of Instruction to Science Teachers, 1907, Information as to, and Syllabus, Form 501. (9) Certificate Examination for Teachers in Elementary Schools: Statistics of Candidates. (10) List of Training College Students who have completed their periods of training and are qualified by examination for recognition as Certificated Teachers, 1906. 6d. (11) Summary of Figures relating to State-aided Secondary Schools in England (excluding Wales and Monmouthshire), together with a Memorandum on the Management and Character of those Schools in respect of Public Control and Freedom from Denominational Restrictions. 1d. Wyman. (12) Regulations and Syllabus for Examination of Candidates for recognition as Pupil-Teachers, 1908. (13) Circular 532 (to Inspectors) revised, and List 6 (Local Education Areas in England with Inspectors assigned to each).

Bristol, A University for: Address at the Merchant Venturers' Technical College (Distribution of Prizes), December 20, 1906. By Prof. M. E. Sadler, M.A., LL.D. Bristol: Hill (XI St. John Street).

Cardiff, Report on the School System of. Prepared by Sir Philip Magnus, M.P., Fellow of the University of London. Cardiff Education Committee.

Carnegie Foundation for the Advancement of Teaching, Bulletin of the: Papers relating to the admission of State Institutions to the System of Retiring Allowances of the Carnegie Foundation. Number 1. Published by the Foundation.

Chile, Republica de: Anales de la Universidad. Mayo–Junio, 1906. Santiago de Chile. Imprenta Cervantes.

[Among "Memorias Literarias," conclusion (long paper) of "Lecciones de introducción a la pedagojía experimentál," por Wilhelm Manu.]

City and Guilds of London Institute.—(1) Report of Council, 1907 Gresham College, E.C. (2) Department of Technology: Programme for Session, 1907–8. 9d. net. Murray.

Deaf, Seventh Annual Report of the Boston School for the, at "Norroway," Randolph, Mass., 1906. Boston: Wright & Potter Printing Co.

Feeble-Minded, National Association for the. After-Care Conference, 1906: Report. 1s. Denison House, 296 Vauxhall Bridge Road, S.W.

Head Mistresses, The Association of. Report, 1907.

Industrial Training in Public Elementary Schools. By Edric Bayley, L.C.C., Chairman of the Governing Body of the Borough Polytechnic Institute, 1901–05. Second Edition. 3d. Cornell (63 Borough Road, Southwark, S.E.).

Johns Hopkins University Circular. (1) No. 3 (March), Notes from the Biological Laboratory. (2) No. 4 (April), The Economic Seminary, 1906–07. (3) Register of Johns Hopkins University, 1906–07.

L.C.C.—(1) Report on Public Elementary Schools maintained by the Council for year ended March 31, 1906. Part I.: Report and Introduction; Tables relating to L.C.C. Schools. 10s. Part II.: Tables relating to Non-provided Schools. 5s. (2) Handbook of Examination Papers (Elementary School Leaving Examination, 1906), with Examiners' Reports and Summary of Results. 3d. (3) Report on Special Schools for Blind, Deaf, and Defective Children, for the year ended March 31, 1906. 1s. 6d. King.

N.U.T.: Report for 1907. 1s. Bolton House, Russell Square, W.C.

Ontario: Report of the Minister of Education, 1906, Parts I. and II.

Staffordshire C.C. Education Committee: Directory for Higher Education, 1907–08.

Miscellaneous.

Agriculture and Fisheries, Board of. Various leaflets. Practical.

Art Desk and Tables, The "Stratford." Stratford-on-Avon: James Cox.

[Illustrations, with description of special features.]

Boys' League of Honour: its Aims and Methods and the Procedure of its Courts. Preface by J. B. Paton, M.A., D.D. J. Clarke & Co.

Channel Tunnel. Reports by British and French Engineers; with papers on National Defence by General Sir William Butler, G.C.B., Maj.-Gen. Sir Alfred E. Turner, K.C.B., and Vice-Admiral Sir C. Campbell, K.C.M.G. Also various papers favourable to the scheme. Channel Tunnel Co., Caxton House, Westminster.

Fairy Tales, Aunt Kate's. Nos. 1 and 2. 1d. each. Leng.

[From Grimm. No. 1 has 14 stories; No. 2 has 9. Open type; illustrations numerous, rough but expressive.]

Household Guide, Aunt Kate's. New edition. 1d. Leng.

Post Cards, The Country Press Pictorial Descriptive. (1) British Trees (natural figures), (2) British Trees (natural figures of boles)—from photographs taken by George Francis Heath: 6 post cards each set. 6d. each set. The Country Press, Kensington, W.

Weights and Measures, Metric and English. 1d. Radley (30 Theobalds Road, W.C.).

1907.

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SYLLABUS.

I. (Sept. 26.) *Types of Troublesome Pupils:* Meaning of type: advantages of classification by types: dangers of such classifications: temperament and possibility of modifying it: correction of character: the ideal pupil as standard: deflections from the standard in two directions according as we consider intellect or conduct: manipulation of characters as actually found in school: specification of types and suggestions for their treatment.

II. (Oct. 3.) *The Individual and the Class:* Individual must be studied as individual: not always necessarily treated as individual: advantages of class teaching over individual instruction: maximum and minimum sizes of classes: relation between subject and size of class: teaching class through individual and *vice versa*: psychology of class as such: disintegration and redintegration of class: class leaders and their manipulation.

III. (Oct. 10.) *Parents and Home Lessons:* Spheres of the parent and the teacher in relation to school work: parent as teacher: parent as "preparation master": "causing another to learn": special characteristics of home work as compared with work done in school: principles on which kind and amount of home work have to be determined: the unit of home study: dangers of home study, with special reference to the nature of the home.

IV. (Oct. 17.) *Curricula and Organization:* Curricula as data: limits of variation of curricula at discretion of teacher: principles underlying the determination of curricula: relation of curricula to organization: organization by "sides": the Form System: Composite Forms: the place of the specialist teacher: various kinds of organization in which the pupils have a share in school government: principles on which the allocation of pupils to particular forms is determined.

V. (Oct. 24.) *Time Tables:* Esoteric and exoteric time tables: degree of detail: practical considerations in the drawing up of time tables: the unit of time in relation to the day, week, and term: fixed and variable quantities: application of law of diminishing returns: danger signal of fatigue: *ennui* and weariness: the influence of the meal hour: mental "second wind": danger of pathological brightness of intellect.

VI. (Oct. 31.) *Examinations and Corrections:* Educational and administrative purposes of examinations: evils of external examinations and means to minimize those evils: advantages of class examinations: how to draw up an examination paper: hints for pupils on how to work an examination paper: how to mark examination papers: various methods of marking ordinary written work in school: practical suggestions to save waste of time and ensure efficiency.

VII. (Nov. 7.) *Lecturing in School:* Distinction between lecturing and teaching: why lecturing is discredited in schools: recent tendency to return to lecturing in History, Science, and even Geometry: work demanded of the pupil who is taught on the lecture system: art of listening: preparation of lecture materials by teacher and by pupil: length of lectures in relation to stage of pupils: combination of teaching and lecturing.

VIII. (Nov. 14.) *Note-taking and Text-books:* Note-taking a correlative of lecturing: difficulties and dangers of note-taking: its place at different stages in the school course: how far it can be taught: relation to different school subjects: note-book as text-book: relation beteen teacher's work and the text-book: relation of text-book to pupil's private study: classification of text-books: tests of a good text-book.

IX. (Nov. 21.) *Apparatus:* Distinction from furniture: aids in actual teaching: danger of being dominated by apparatus: over-elaborate apparatus: ready-made and home-made apparatus: permanent and temporary: hints for preparing apparatus: various kinds of school maps: the optical lantern: various kinds of blackboards: use of the blackboard for writing and for drawing: uneducational and excessive use of the blackboard.

X. (Nov. 28.) *Special Methods:* The place in practical school work of the various special methods, such as the Socratic, the Heuristic, the Concentric: the principle of correlation of studies: dangers of rigid application of any one of the special methods: illustrations of the application of these methods to the ordinary school subjects such as Arithmetic, Grammar, Elementary Science: the next two lectures will supply further illustrations.

XI. (Dec. 5.) *Connection between Language and Literature:* The three vocabularies and their relation to language and literature respectively: possibility of *teaching* literature at all at the various stages of school life: relation of conversation and composition to literature proper both in English and in foreign languages: suggestions of exercises in English Composition suitable to prepare for the study of English Literature.

XII. (Dec. 12.) *Connection between Geography and History:* Geography a science: possibility of a science of History: neither can be taught quite independently of the other, though Geography is the more independent: Geography is the space setting of History: limitations of the correlation between the two subjects: applications of the Concentric and Heuristic methods: suggestions for practical problems that will bring out the true relations between Geography and History.

The Fee for the Course of Twelve Lectures is Half-a-Guinea.

*** The Lectures will be delivered on THURSDAY EVENINGS, at 7 o'clock, at the College, Bloomsbury Square, W.C.—Members of the College have free admission to the Course.

MATHEMATICS.

16216 (W. F. BEARD, M.A.)—Two similar ellipses with their axes parallel are cut by any straight line in A, B, A′, B′; a point O is taken in AD such that OA.OB = OA′.OB′. Prove that the locus of O is a straight line.

Analytical Solution by R. J. WHITAKER, B.A., *and* A. M. NESBITT, M.A.

Let the equations to the ellipses be

$$ax^2+by^2=1 \quad\text{and}\quad a(x+h)^2+b(y+k)^2=c.$$

Let O be the point (x', y'), and the equation of AB

$$(x-x')/\cos\theta=(y-y')/\sin\theta=r.$$

Then OA, OB are the roots of the equation in r

$$a(r\cos\theta+x')^2+b(r\sin\theta+y')^2=1,$$

whence $\quad \mathrm{OA.OB}=(ax'^2+by'^2-1)/(a\cos^2\theta+b\sin^2\theta)$;

and, similarly,

$$\mathrm{OA'.OB'}=[a(x'+h)^2+b(y'+k)^2-c]/(a\cos^2\theta+b\sin^2\theta).$$

Therefore the locus of O is

$$ax^2+by^2-1=a(x+h)^2+b(y+k)^2-c,$$

i.e., $\quad 2ahx+2bky+ah^2+bk^2-c+1=0,$

a straight line. This straight line passes through the real points of intersection (if any) of the ellipses. Also, if OA.OB = m.OA′.OB′, m being constant, the locus of O is an ellipse similar to the given ellipses and passing through their points of intersection.

The above proof is applicable to similar hyperbolas, and a similar line of reasoning will establish the proposition in the case of two parabolas whose axes are parallel.

A Note on Freedom and Geometry.

By S. C. BAGCHI, B.A., LL.B.

A plane may be considered as an aggregate of points (Cartesian view) or an aggregate of straight lines (Plückerian view). Both these views are united in the conception of *freedom*. The degree of freedom of a *variety* (*variété* of Laurent: see *Géom. gén.*) is the number of independent parameters required to specify the variety uniquely: *e.g.*, a point or a straight line has two degrees of freedom in two-dimensional space. A plane is therefore engendered by a variety with two degrees of freedom. If we diminish the freedom of such a variety by unity, we can make it obey a fixed law. This law is the equation to a curve; which is evident from the fact that $f(x, y, z)=0$ (where x, y are the Cartesian co-ordinates of a point and $z=1$ is a linear unit introduced to make f homogeneous) can always be found whenever either

(i.) $x=\phi_1(\lambda,\mu)$, $y=\phi_2(\lambda,\mu)$, $\mu=\psi(\lambda)$ hold simultaneously

or (ii.) $f_1(x, y, z, \alpha\beta)=0$ is a linear equation where $\beta=\phi(\alpha)$ such that $f_1=0$ and $\partial f_1/\partial\alpha+\partial f_1/\partial\beta\, d\beta/d\alpha=0$. In the latter case $f=0$ is an envelope of $f_1=0$, and, if f_1 is of the form $\phi_1+\theta\phi_2$ where θ is a function of α and β, the curve $f=0$ is reduced to a fixed point: viz., the intersection of $\phi_1=0$ and $\phi_2=0$. Therefore a variety with residual freedom 1 and of original freedom 2 always describes a plane curve.

Now let $S=0$ and $S_1=0$ be any two algebraic curves which are such that $S+\lambda S_1=0$ is a curve with one degree of freedom. Let Ω be an operator which changes $S=0$ into $\Omega S=0$. Then $\Omega(S+\lambda S_1)=0$ always passes through the fixed points given by the equations $\Omega S=0$ and $\Omega S_1=0$. If these curves intersect in μ points and if ν be the degree of $\Omega(S+\lambda S_1)=0$, this has $\frac{1}{2}\nu(\nu+3)-\mu$ degrees of freedom. Now, if σ be the degree of $S=0$ and σ_1 that of $S_1=0$, we must have $\sigma=\sigma_1$, because λ is of dimension zero in x and zero in y. Further $\sigma\not>2$, because $S+\lambda S_1=0$ must pass through $\frac{1}{2}\sigma(\sigma+3)-1$ points and these must be both on $S=0$ and $S_1=0$; therefore $\frac{1}{2}\sigma(\sigma+3)-1=\sigma^2$ or σ is a root of

$$\sigma^2-3\sigma+2=0 \qquad\text{(A)}.$$

Hence $\sigma=1$ or 2, $\sigma=1$ gives straight lines, $\sigma=2$ gives conics.

Take $\sigma=2$. Now, as $\Omega S+\lambda\Omega S_1=0$ has a single degree of freedom, the operator Ω can never elevate the degree of $S+\lambda S_1=0$ (just proved): *i.e.*, $\Omega=\Omega_1$ is a differential operator. For $\sigma=1$ the operator $\Omega=\Omega_2$ will be an integrating operator such that $\Omega S+\lambda\Omega S_1=0$ must not exceed the degree limit 2. Therefore $\Omega_1\Omega_2=1$ in the sense that Ω_1 is the reciprocal process of Ω_2. If we take $\Omega_1\equiv\xi\,\partial/\partial x+\eta\,\partial/\partial y+\zeta\,\partial/\partial z$ where $z=\zeta=1$ after operation and ξ, η are constants, we get the result enunciated by Prof. Cochez in Question 16230.

Thus a plane is a locus of varieties with freedom 2, and as the freedom diminishes to 1 and 0 we gradually pass from the plane to the curve and then to the point. A corresponding process in arithmetic is the passage from the complex domain to the real and then to zero. And, in virtue of the equation (A), conics and straight lines are the only reciprocally related curves in a plane, in the sense that, given one system with one degree of freedom, we can get the other system

of equal freedom by operating on the given system with Ω_1 or Ω_2, as the case may be, where $\Omega_1\Omega_2 = 1$.

N.B.—It may perhaps be added that the theorem in Question 16251 (W. F. Beard, M.A.) is also deducible from the above considerations.

11110. (R. W. D. Christie.)—Find, by means of the quintic roots of minus unity, all the values in succession of X and Y in the equation $X^2 - 5Y^2 = \pm 4$, and give the values of X and Y respectively.

Solutions (I.) *by the* Proposer; (II.) *by* A. H. Bell.

(I.) In $X^2 - 5Y^2 = +4$, let

$$X = (\omega_2+\omega_3)^{2n} + (\omega_4+\omega_5)^{2n} = 3, 7, 18, 47, 123, 322, 843, \ldots$$
$$= \text{form } 3a^2 + 2ab + 2b^2,$$
$$Y = \frac{(\omega_2+\omega_3)^{2n} - (\omega_4+\omega_5)^{2n}}{(\omega_2+\omega_3) - (\omega_4+\omega_5)} = 1, 3, 8, 21, 55, 144, \ldots = \text{form } a(a+2b).$$

In $5Y^2 - X^2 = +4$, let

$$X = (\omega_2+\omega_3)^{n} + (\omega_4+\omega_5)^{n} = 1, 3, 4, 7, 11, 18, 29, 47, \ldots$$
$$= \text{form } a^2 - b^2 + 4ab,$$
$$Y = \frac{(\omega_2+\omega_3)^{n} - (\omega_4+\omega_5)^{n}}{(\omega_2+\omega_3) - (\omega_4+\omega_5)} = 1, 1, 2, 3, 5, 8, \ldots \text{ the continuant series}$$
$$= \text{form } a^2 + b^2$$

where $a^2 - b^2 - ab = \pm 1$ and $-1, \omega_2, \omega_3, \omega_4, \omega_5$ are the roots of $x^5 + 1 = 0$.

(II.) When $2x$ and $2y$ are substituted for X and Y this equation becomes $x^2 - 5y^2 = \pm 1$. The quotients for the $\sqrt{5}$ are $2:4$, $4:4$, ... ad inf.; therefore

$$\frac{x_n}{y_n} = \frac{1}{0}, \frac{2}{1}, \ldots \quad \text{or} \quad \frac{X_n}{Y_n} = \frac{2}{0}, \frac{4}{2}, \ldots.$$

Having two terms, the series is extended by $X_{n+1} = 4X_n + X_{n-1}$, and the same for Y. The constant 4 is derived from the quotient 4. Hence the values of

$$\frac{X_n}{Y_n} = \frac{2}{0}, \frac{4}{2}, \frac{18}{8}, \frac{76}{34}, \frac{322}{144}, \frac{1364}{610}, \frac{5778}{2584}, \ldots \text{ ad inf.}$$

16205. (Lt.-Col. Allan Cunningham, R.E.)—Given that $N = x^x$ has 38907 figures, x being an integer, find its first three and last three figures.

Solution by James Blaikie, M.A.

$N = x^x$ (38907 figures); therefore $\log N = x \log x = 38906 +$;

and, if $y = \log x$, $y + \log y = \log 38906 = 4{\cdot}590017$; whence, by trial, we easily find $y = 3{\cdot}98914 = \log x$ approximately. From this, since x is an integer, we get $x = 9753$ and $\log x = 3{\cdot}989138$; therefore, using six-figure tables,

$$x \log x = 38906{\cdot}063 = \log 116\ldots \text{ (38907 figures).}$$

Thus we have found the first three figures. To find the last three, we may use contracted multiplication, neglecting coefficients of power of 10 greater than the second. Thus we have

$$N = 9753^{9753} = \ldots 753^{8192+1024+512+16+8+1}$$
$$= \ldots 041 \times \ldots 481 \times \ldots 441 \times \ldots 721 \times \ldots 561 \times \ldots 753 = \ldots 473;$$

therefore $N = 11558\ldots 473$ (38907 figures).

The Proposer solves the Question as follows:—

Let C denote the characteristic of $\log N = x \log x$.

Here $C = 38906$. Taking trial values of x, it will be found (by actual computing) that, when

$$x = 10000,\ 9000,\ 9500,\ 9750,\ 9753,$$

then $C = 40000, 35588, 37788, 38892, 38906$.

Hence $x = 9753$ is the correct value; and, using 7-figure tables, $\log N = x \log x = 38906{\cdot}0648, \ldots$, whence the first three figures of N are 116....

(To find more figures, larger tables must be used.)

Lastly, to find the last three figures of N it suffices to find the residue of x^x to mod 1000. Barlow's *New Mathematical Tables*, 1814, giving 4th and 5th powers of all numbers $\not> 1000$, suffice (after correction of errata) for this purpose. Here $x \equiv 753 \pmod{1000}$. The following table shows the residues (R) of x^n to argument n:—

$$n = 1,\ 4,\ 5,\ 20,\ 100;\quad 9,\ 13,\ 52,\ 53.$$
$$x^n \equiv 753,\ 081,\ 993,\ 401,\ 001;\ 433,\ 073,\ 241,\ 473.$$

Hence $x^x \equiv 753^{9753} \equiv 753^{(97.100+53)} = (753^{100})^{97}.753^{53}$
$\equiv 753^{53} \equiv 473 \bmod 1000.$

Hence $N = 116\ldots 473$ (total 38907 figures).

16232. (D. Biddle.)—A square holding has been staked out on a level part of the prairie. But a fire has invaded the scene, and all traces of the square have vanished, except the charred remains of four of the stakes, known to have been on distinct sides of it. At present they form the vertices of an irregular quadrilateral. One of the owners, being a mathematician, says that the data are sufficient to enable him to stake out the square afresh on its original lines. How so?

Solutions (I.) *by* W. H. Blythe, M.A.; (II.) *by* Professor E. B. Escott; (III.) *by* Julian Julian; (IV.) *by* Henry Riddell, M.E.

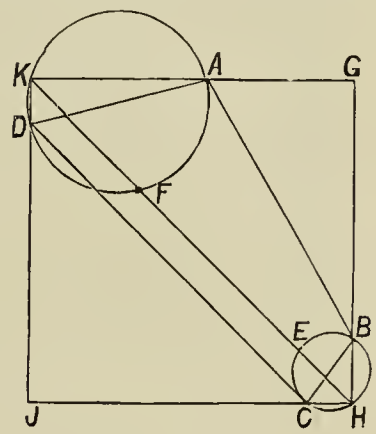
Note.—Solutions (I.) and (II.) are both given for the sake of the variety of the references.—Ed.

(I.) A complete solution of all cases, six in number, will be found in *Solutions to Exercises in Taylor's Euclid*, by W. W. Taylor, No. 326. In this particular case the quadrilateral will not have re-entrant angles, and its angles must not lie on the sides of the square produced.

Let ABCD be the given quadrilateral. Describe circles upon AB and CD. We have then two semicircles external to ABCD and two partly or altogether within the figure. Bisect the semicircles within the figure at the points L and M. Let LM produced cut the external semicircles in S and T; then ST is a diagonal of the required square.

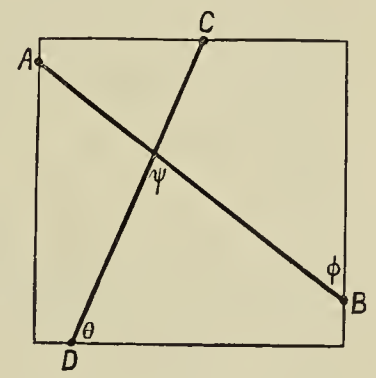
There is but one solution unless ABCD is a square: in this case L and M coincide and we have an infinite number of solutions.

(II.) Under certain conditions the problem may have an indefinite number of solutions. This is a particular case of a more general problem solved in E. Catalan's *Théorèmes et Problèmes de Géométrie élémentaire*, p. 185, Problem 4. This solution is due to Prof. Neuberg.



On OD and BC, the opposite sides of the quadrilateral connecting the four points, as diameters, draw circles. Let F be the middle point of arc AD and E the middle point of arc BC. EF will pass through opposite vertices of the square. The construction is indeterminate when E and F coincide, *i.e.*, when there is a point from which two opposite sides of the quadrilateral subtend a right angle.

(III.) $AB \sin\phi = CD \sin\theta$
$= \text{side of square},$
$\theta - \phi = 90° - \psi.$



Hence

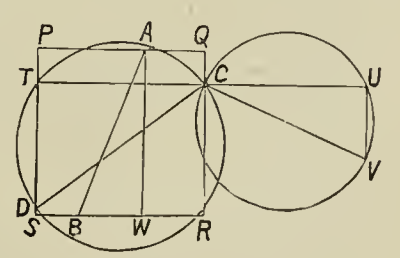
$$AB/CD = \sin\theta/\sin\phi$$
$$= \cos(\psi - \phi)/\sin\phi$$
$$= (\cos\psi\cos\phi + \sin\psi\sin\phi)/\sin\phi$$
$$= \cos\psi\cot\phi + \sin\psi;$$

therefore

$$(AB/CD - \sin\psi)/\cos\psi = \cot\phi,$$

and from this the square may be set out on the original lines. If, however, $AB = CD$ and ψ becomes a right angle, the problem is indeterminate.

(IV.) Let PQRS be a square upon the sides of which A, B, C, D are points chosen at random, one on each side. Join AB, CD (points on pairs of opposite sides). Draw AW parallel to QR, and TC parallel to PQ. Produce TC to U, making $CU = TC$, and draw UV perpendicular to CU, and equal to BW. Then is $CV = AB$ and perpendicular to it.



Hence the construction for the problem: To describe a square through four points A, B, C, D. At C draw $CV = AB$ and perpendicular to it. Upon CD, CV as diameters describe circles, and through C draw the double chord TC, CU so that $TC = CU$ (a common book exercise). Then is TC = a side of the square and parallel to it, and the method of completing the figure is obvious.

16185. (Professor Neuberg.)—Trouver

$$\int \frac{\sin 5x}{\sin 3x}\,dx, \quad \int \frac{\sin 3x}{\sin 5x}\,dx.$$

Solution by S. Narayana Aiyar.

These are only particular cases of the more general integral

$$\int \frac{\sin mx}{\sin nx}\,dx.$$

$$\frac{\sin mx}{\sin nx} = \frac{1}{2n}\Sigma(-1)^k \sin m\alpha \operatorname{cosec}(x-\alpha) \quad \text{or} \quad \frac{1}{2n}\Sigma(-1)^k \sin m\alpha \cot(x-\alpha),$$

according as $m+n$ is odd or even, where $\alpha = k\pi/n$. Whence the integral is

$$\frac{1}{2n}\Sigma(-1)^k \sin m\alpha \log\tan\tfrac{1}{2}(x-\alpha) \quad\text{or}\quad \frac{1}{2n}\Sigma(-1)^k \sin m\alpha \log\sin(x-\alpha),$$

according as $m+n$ is odd or even.

Note.—The PROPOSER writes:—"J'avais proposé la question pour provoquer une solution directe qui aurait été préférable. M. Aiyar devrait au moins donner les valeurs explicites des deux integrales proposées."

9615. (Professor BORDAGE.)—Find (1) the most general functions f and ϕ such that for all values of x and y the expression

$$V = (x^2-y^2)\,[f(x+y)+\phi(x-y)] \ldots\ldots\ldots\ldots\ldots\ldots \text{(I.)}$$

can be put under the form $V = F(x)-\Phi(y)$ ..... (II.); and (2) the functions F and Φ.

Solution by S. NARAYANAN, B.A., L.T.

We have the differential equations

$$\partial^2 V/(\partial x\,\partial y) = (x^2-y^2)(f''-\phi'')+2x(f'-\phi')-2y(f'+\phi') \text{ from (I.)}$$
$$= 0 \quad \text{from (II.)}.$$

Hence we should have

$$(x^2-y^2)(f''-\phi'')+2x(f'-\phi')-2y(f'+\phi') = 0.$$

Putting $x+y=k$, $x-y=l$, this becomes

$$d^2f/dk^2+2/k\,(df/dk) = d^2\phi/dl^2+2/l\,(d\phi/dl).$$

Hence $\quad d^2f/dk^2+2/k\,(df/dk) = \lambda$ (a constant);

therefore $f = a_1+b_1/(x+y)+c(x+y)^2$ and $\phi = a_2+b_2/(x-y)+c(x-y)^2$.

And F and Φ are easily deduced.

16224. (Professor SANJÁNA, M.A.)—Prove that

$$1\,\frac{1}{2}+\frac{1}{2}\,\frac{1.3}{2.4}+\frac{1}{3}\,\frac{1.3.5}{2.4.6}+\frac{1}{4}\,\frac{1.3.5.7}{2.4.6.8}+\ldots = \log_e 4,$$

$$\frac{1}{2}\,\frac{1}{2}+\frac{1}{3}\,\frac{1.3}{2.4}+\frac{1}{4}\,\frac{1.3.5}{2.4.6}+\ldots = 1,$$

$$\frac{1}{3}\,\frac{1}{2}+\frac{1}{4}\,\frac{1.3}{2.4}+\frac{1}{5}\,\frac{1.3.5}{2.4.6}+\ldots = \frac{5}{6};$$

and show how to find the sums of similar series.

Solutions (I.) *by* Professor E. B. ESCOTT; (II.) *by* S. NARAYANA AIYAR *and* C. M. ROSS.

(I.) The series may be summed by the following method, due to Euler:—

Let
$$y = \frac{1}{2}x+\frac{1}{2}\cdot\frac{1.3}{2.4}x^2+\frac{1}{3}\cdot\frac{1.3.5}{2.4.6}x^3+\ldots,$$

$$\frac{dy}{dx} = \frac{1}{2}+\frac{1.3}{2.4}x+\frac{1.3.5}{2.4.6}x^2+\ldots,$$

$$x\frac{dy}{dx} = (1-x)^{-\frac{1}{2}}-1 \quad\text{or}\quad dy = \left(\frac{1}{x(1-x)^{\frac{1}{2}}}-\frac{1}{x}\right)dx,$$

$$y = \log\frac{1}{[1+\sqrt{(1-x)}]^2}+C,$$

and, since $y=0$ when $x=0$, $C=\log 4$, $y = \log\dfrac{4}{[1+\sqrt{(1-x)}]^2}$. When $x=1$, $y=\log 4$.

The others may be summed in a similar way, or may be summed by the following method given in Chrystal's *Algebra*, Part II., chap. xxvii., § 5:—

$$\frac{1}{2}\cdot\frac{1}{2}+\frac{1}{3}\cdot\frac{1.3}{2.4}+\frac{1}{4}\cdot\frac{1.3.5}{2.4.6}+\ldots$$

$$= \frac{\frac{1}{2}}{1.2}+\frac{\frac{1}{2}\cdot\frac{3}{2}}{1.2.3}+\ldots = -\frac{-\frac{1}{2}}{1.2}+\frac{-\frac{1}{2}\cdot-\frac{3}{2}}{1.2.3}-\ldots$$

$$= 2\left(-\frac{\frac{1}{2}\cdot-\frac{1}{2}}{1.2}+\frac{\frac{1}{2}\cdot-\frac{1}{2}\cdot-\frac{3}{2}}{1.2.3}-\ldots\right) = 2\left[-(1-1)^{\frac{1}{2}}+1-\tfrac{1}{2}\right) = 1.$$

$\dfrac{1}{3}\cdot\dfrac{1}{2}+\dfrac{1}{4}\cdot\dfrac{1.3}{2.4}+\dfrac{1}{5}\cdot\dfrac{1.3.5}{2.4.6}+\ldots$.—The general term

$$\frac{1}{n+2}\cdot\frac{1.3.5\ldots(2n-1)}{2.4.6\ldots 2n}$$

may be written

$$\frac{\frac{1}{2}\cdot\frac{3}{2}\cdot\frac{5}{2}\cdots\frac{2n-1}{2}}{1.2.3\ldots n(n+2)} = \frac{-\frac{1}{2}\cdot-\frac{3}{2}\cdot-\frac{5}{2}\cdots-\frac{2n-1}{2}(n+1)}{1.2.3\ldots n(n+1)(n+2)}(-1)^n$$

$$= \left(\frac{-\frac{1}{2}\cdot-\frac{3}{2}\cdot-\frac{5}{2}\cdots-\frac{2n-1}{2}}{1.2.3\ldots n(n+1)}-\frac{-\frac{1}{2}\cdot-\frac{3}{2}\cdots-\frac{2n-1}{2}}{1.2.3\ldots(n+2)}\right)(-1)^n;$$

therefore the sum of the series is

$$\frac{4}{3}\left(-(1-1)^{\frac{3}{2}}+1-\frac{3}{2}+\frac{3.1}{2.4}\right)+2\left(-(1-1)^{\frac{1}{2}}+1-\frac{1}{2}\right) = \frac{5}{6}.$$

(II.) By the binomial theorem

$$(1-x)^{-\frac{1}{2}} = 1+\frac{1}{2}x+\frac{1.3}{2.4}x^2+\frac{1.3.5}{2.4.6}x^3+\ldots.$$

Multiplying both sides by x^n where n is positive and integrating both sides within the limits 1 and 0, we get

$$\int_0^1 x^n(1-x)^{-\frac{1}{2}}dx = \left[\frac{x^{n+1}}{n+1}+\frac{x^{n+2}}{n+2}\cdot\frac{1}{2}+\frac{x^{n+3}}{n+3}\cdot\frac{1.3}{2.4}+\ldots\right]_0^1$$

$$= \frac{1}{n+1}+\frac{1}{n+2}\cdot\frac{1}{2}+\frac{1}{n+3}\cdot\frac{1.3}{2.4}+\frac{1}{n+4}\cdot\frac{1.3.5}{2.4.6}+\ldots.$$

Denoting the series $\dfrac{1}{n+2}\cdot\dfrac{1}{2}+\dfrac{1}{n+3}\cdot\dfrac{1.3}{2.4}+\dfrac{1}{n+4}\cdot\dfrac{1.3.5}{2.4.6}+\ldots$ by S_n, we get

$$S_n = \int_0^1 x^n(1-x)^{-\frac{1}{2}}dx-\frac{1}{n+1} = \frac{\Gamma(n+1)\,\Gamma(\frac{1}{2})}{\Gamma\left(\frac{2n+3}{2}\right)}-\frac{1}{n+1}.$$

By giving to n successively the values 0, 1, 2, ..., we get the values of the series beginning with the second. To get the first series multiply by $1/x$ and then integrate.

16041. (Professor SANJÁNA, M.A., and M. V. ARUNACHALAN, M.A.)—If $R_n = 1+\frac{1}{2}+\frac{1}{3}+\ldots+1/n$, prove that $R_1-R_2+R_3-R_4+\ldots$ ad inf. $=\frac{1}{2}\log 2$.

Note by G. H. HARDY, M.A.

The series $R_1-R_2+R_3-\ldots$ where

$$R_n = 1+\tfrac{1}{2}+\tfrac{1}{3}+\ldots+1/n$$

is obviously not convergent. If, however, S_n denotes the sum of the first n terms, $s_{2n} = -\frac{1}{2}-\frac{1}{4}-\ldots-1/2n$, $s_{2n-1} = 1+\frac{1}{3}+\ldots+1/(2n+1)$,

and $\quad (s_1+s_2+\ldots+s_{2n})/2n = (\sigma_2+\sigma_4+\ldots+\sigma_{2n})/2n$,

where $\quad \sigma_{2n} = 1-\frac{1}{2}+\frac{1}{3}-\ldots+1/(2n-1)-1/2n$,

Since $\lim\sigma_{2n} = \log 2$, it follows, by a well known theorem, that

$$\lim(s_1+s_2+\ldots+s_{2n})/2n = \tfrac{1}{2}\log 2;$$

and, since $\lim s_n/n = 0$, we can say simply that

$$\lim(s_1+s_2+\ldots+s_n)/n = \tfrac{1}{2}\log 2.$$

Thus the series, though not convergent, is summable, in the sense defined by Frobenius and Césaro, and its "sum" is $\frac{1}{2}\log 2$.

16230. (Professor COCHEZ.)—On considère toutes les coniques passant par quatre points donnés. Démontrer que les polaires d'un point fixe par rapport à toutes ces coniques passent au même point.

Solutions (I.) *by* HENRY RIDDELL, M.E.; (II.) *by* L. B. BENNY *and* Professor SANJÁNA, M.A.

(I.) This is a theorem proved in many of the text-books. The following proof is about as short as can be given:—

By projecting two of the points of intersection into the two circular points, we have the system of conics transformed into a system of co-axial circles. The polars of a fixed point for this system of circles obviously pass through the point diametrically opposite the given point on the circle of the conjugate co-axial system which passes through the fixed point d. For this circle cuts all the system at right angles, and the line joining its centre to that of any circle of the system is cut in harmonic ratio by the two circumferences.

(II.) Take the diagonal triangle of a quadrangle formed by four points for triangle of reference. The four points are expressible as $(\pm f, \pm g, \pm h)$. The equation of any conic through the four points is

$$u\alpha^2+v\beta^2+w\gamma^2 = 0 \quad\text{with condition}\quad uf^2+vg^2+wh^2 = 0 \ldots\ldots(1).$$

The polar of the fixed point $(\alpha_0, \beta_0, \gamma_0)$ with reference to any of these conics has the equation $u\alpha\alpha_0+v\beta\beta_0+w\gamma\gamma_0 = 0$,

and condition (1) shows that this always passes through the fixed point $(f^2/\alpha_0, g^2/\beta_0, h^2/\gamma_0)$.

16208. (Professor NANSON.)—If $a^n+b^n+c^n = 0$, $a^{n-1}x+b^{n-1}y+c^{n-1}z = 0$, $x^n+y^n+z^n = 0$, and $abc \neq 0$, then either x/a, y/b, z/c are all equal or the sum of their homogeneous products of $n-2$ dimensions is zero.

Solution by S. NARAYANAN, W. F. BEARD, M.A., *and* M. T. NARANIENGAR, M.A.

The equations when written in the form

$$\left.\begin{aligned} a^n.1+b^n.1+c^n.1 &= 0\\ a^n.x/a+b^n.y/b+c^n.z/c &= 0\\ a^n.(x/a)^n+b^n.(y/b)^n+c^n.(z/c)^n &= 0\end{aligned}\right\} \ldots\ldots\ldots\ldots\ldots\ldots \text{(A)}$$

may be considered simultaneous in a^n, b^n, c^n.

Hence, either $a = b = c = 0$ (which is disallowed by the hypothesis), or the determinant of (A),

$$\begin{vmatrix} 1, & 1, & 1 \\ \lambda, & \mu, & \nu \\ \lambda^n, & \mu^n, & \nu^n \end{vmatrix} = 0 \quad \text{.....(B)},$$

where $\lambda = x/a, \quad \mu = y/b, \quad \nu = z/c.$

The factors of (B) are $(\lambda-\mu)(\mu-\nu)(\nu-\lambda)\,H_{n-2}$, where H_{n-2} denotes a homogeneous function in λ, μ, ν of $n-2$ dimensions.

If $\lambda = \mu$, we have $x/a = y/b = k$; therefore $x = ka$, $y = kb$. Substituting these in the third of the given equations, we get

$$k^n a^n + k^n b^n + z^n = 0.$$

And the first given equation gives

$$k^n a^n + k^n b^n + k^n c^n = 0.$$

Hence $z^n = k^n c^n$; therefore $z/c = k$; therefore $\lambda = \mu = \nu$, or $H_{n-2} = 0$.

QUESTIONS FOR SOLUTION.

16243. (Professor Sanjána, M.A. *Suggested by* Question 16188, Lt.-Col. Allan Cunningham, R.E.) *Correction.*—Find a square number $P^2 = c^2 + d^2$ such that $2cd$ or $c^2 - d^2$ is of the form $x^4 - y^4$ or $2xy(x^2 + y^2)$.

16255. (Alfred A. Robb.)—The solution of the differential equation $d\,y/dx^2 = Ay'''x^n$ may be reduced to quadratures when either

$$n = -(m+3) \quad \text{or} \quad n = -\tfrac{1}{2}(m+3).$$

Show that the equation may also be solved when

$$m = 2, \; n = -\tfrac{15}{7}; \quad m = 2, \; n = -\tfrac{20}{7} \text{ .....(1; 2)}.$$

16256. (V. Ramaswami Aiyar, M.A.)—Given three urns A, B, C and $x+y+z$ balls where x, y, z are positive integers in descending order of magnitude. Having thrown 3 of these balls into the urn A, 2 into the urn B, and 1 into the urn C, the remaining balls are thrown, one by one, into the urns in such a way that the numbers of the balls in the urns A, B, C are always in descending order of magnitude and eventually we have x balls in the urn A, y balls in the urn B, and z balls in the urn C. Prove that the number of ways in which this can be done is

$$\{(x+y+z-6)!/[(x-1)!\,(y-1)!\,(z-1)!]\}\,(x-y)(x-z)(y-z),$$

and generalize the result.

16257. (G. H. Hardy, M.A.)—Show that the series

$$\log 1 - \log 2 + \log 3 - \ldots$$

is summable, *i.e.*, that, if s_n denotes the sum of the first n terms, then $(s_1 + s_2 + \ldots + s_n)/n$ tends to a limit as n tends to infinity: and find its sum. Show also that, if $\phi(n)$ tends steadily to 0 as n tends to infinity, the series $R_1 - R_2 + R_3 - \ldots$ where $R_n = \phi(1) + \phi(2) + \ldots + \phi(n)$ is summable, and its sum is equal to that of the convergent series

$$\phi(1) - \phi(2) + \phi(3) - \ldots.$$

16258. (Lt.-Col. Allan Cunningham, R.E.)—If

$$N_1 = 1 + y, \quad N_2 = 1 + y^2, \quad N_4 = 1 + y^4,$$

find y (>1) such that N_1, N_2, N_4 shall all be prime.

16259. (T. Stuart, M.A., D.Sc.)—Prove rigidly that the only integral values of x and y satisfying the equation $x^2 - 2y^4 = -1$ are $(x, y) = (1, 1)$ and $(239, 13)$. Show, however, that there is is an infinite series of fractional solutions, and find at least one of these.

[For tentative solutions to the first part of this Question, *cf. Reprint*, New Series, Vol. IX., Question 15753, pp. 23–24].

16260. (R. F. Davis, M.A.)—If $x - M$, $x - N$, $x - (2M - N - 2)$, $x - (2N - M - 2)$ are all perfect squares, find x in terms of M and N.

16261. (Robt. W. D. Christie.)—Solve

$$x^2/z^2 - y^2/z^2 = y^2/z^2 - w^2/z^2 = 65,$$

and give an example where there are two sets of values such as

$$\left(\frac{85}{6}\right)^2 - \left(\frac{41}{6}\right)^2 = \left(\frac{113}{6}\right)^2 - \left(\frac{85}{6}\right)^2 = \left(\frac{373}{30}\right)^2 - \left(\frac{23}{30}\right)^2$$
$$= \left(\frac{527}{30}\right)^2 - \left(\frac{373}{30}\right)^2.$$

Can we substitute n = any integer for 65?

[This Question is suggested by one which I am informed appeared in the *Standard* recently and was answered without proof in the *Tribune*.]

16262. (W. P. Workman.)—If the fraction $\frac{1}{7}$ be converted into a radix fraction in scales 2, 3, 4, 5, 6, ..., the numbers of figures in the period are respectively 3, 6, 3, 6, 2, 1, 1, 3, 6, 3, 6, 2, 1, 1, ..., the numbers forming a repeating group of 7 terms. Prove this and show that the same law holds for a fraction 1/N, whether N be prime or not, if, in the latter case, the number of figures completely expressing the radix fraction be taken.

16263. (Professor Sanjána, M.A.)—Given that the roots of the equation $x^n + p_1 x^{n-1} + p_2 x^{n-2} \ldots + p_n = 0$ are $\alpha^2, \beta^2, \gamma^2, \ldots, \nu^2$, is there any simple process by which equations of the same degree with roots $\alpha, \beta, \gamma, \ldots, \nu$ and $-\alpha, -\beta, -\gamma, \ldots, -\nu$ can be written down? [*E.g.*, the roots of $64x^3 - 112x^2 + 56x - 7 = 0$ are $\sin^2\frac{2}{7}\pi$, $\sin^2\frac{4}{7}\pi$, $\sin^2\frac{8}{7}\pi$; the equations with the square roots taken positively and negatively as roots are $8x^3 - 4\sqrt{7}x^2 + \sqrt{7} = 0$, $8x^3 + 4\sqrt{7}x^2 - \sqrt{7} = 0$.]

16264. (Professor Neuberg.)—Le plan tangent en un point quelconque de la surface $xyz = k$ rencontre les axes coordonnés rectangulaires Ox, Oy, Oz aux points A, B, C. Trouver le lieu de l'orthocentre du triangle ABC.

16265. (James Blaikie, M.A.)—ABCD is a tetrahedron in which AB.CD = AC.BD = AB.BC. Prove that the 12 bisectors of the interior angles of the triangular faces intersect in 6 points on the edges of the tetrahedron, and that the straight lines joining the points of intersection lying on opposite edges are concurrent; also that the 12 bisectors of the exterior angles meet in 6 points on the edges produced, and that these 6 points are in one plane.

16266. (Professor E. B. Escott.)—Find a line which is both tangent and normal to the cardioid.

16267. (A. M. Nesbitt, M.A.)—A variable conic, which is (*a*) an equilateral hyperbola, (*b*) a parabola, is drawn to have four-pointic contact with the hyperbola $x^2/a^2 - y^2/b^2 = 1$. Show that the locus of the centre of (*a*) is a bicircular quartic which is the inverse of the fixed hyperbola with respect to a concentric circle of radius $\sqrt{(a^2 - b^2)}$; and that the locus of the focus of (*b*) is also a bicircular quartic, which is its inverse with respect to a concentric circle of radius $\sqrt{(a^2 + b^2)}$.

16268. (Professor Nanson.)—Find the locus of the pole of a given line with respect to a conic which touches three given lines and cuts a given segment harmonically.

16269. (W. F. Beard, M.A.)—A parabola touches the sides of a triangle ABC at P, Q, R; AP, BQ, CR meet at O. Prove that the locus of O is the ellipse through A, B, C whose centre is the centroid of the triangle ABC.

16270. (L. Isserlis, B.A.)—An ellipse of semi-axes a, b passes through two fixed points A, B, a distance $2d$ apart. Prove that the locus of its centre is a sextic curve, which has four nodes on the circle on AB as diameter, if $\frac{1}{2}\sqrt{(a^2 + b^2)} > d > ab/\sqrt{(a^2 + b^2)}$. The nodes degenerate into cusps if $d = \frac{1}{2}\sqrt{(a^2 + b^2)}$, and the tangents at the cusps are parallel to AB.

16271. (C. E. Youngman, M.A.)—In a quadrilateral having two opposite angles right, two squares are inscribed. Prove that they are concentric with the squares on the third diagonal.

16272. (C. Joss, M.A.)—Prove that the nine-point circle passes through twelve uniformly related points.

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8550. (Professor Haughton, F.R.S.)—Assuming, in conformity with the experiments of Régnault:—Total heat of steam = 1113·94 + 0·305 T. Find the temperature of the water in the condenser if w lb. of water at the temperature t be injected into steam at the temperature T, and W lb. be condensed.

8654. (F. Morley, B.A.)—There are n towns joined two and two by railroads. Show that it is possible to pass by rail over the entire system without using any railroad twice if n be odd, and impossible if n be even.

8731. (D. Biddle.)—Find the probability that the distance apart of two points taken at random on the surface of distinct but equal spheres shall not exceed that of the two centres.

8740. (J. J. Walker, F.R.S.)—What uniform force must act vertically on a given mass for a given time, so that it may rise to a given height before turning?

8774. (*From Ozanam's "Recreations."*)—Find the locus of the point from which, if perpendiculars be drawn on the sides of a given angle, the quadrilateral formed shall be equal to a given square.

9000. (R. Knowles, B.A.)—In any triangle prove that

$$a\cos(B - C) + b\cos(A - C) + c\cos(A - B) = 4/R.$$

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Seager, J.E.B. University S., Rochester
Ewen, W. St. Joseph's Coll., Dumfries
Carroll, J.B. St. Joseph's Coll., Dumfries
Self, W.J. *s.* Private tuition
Still, W. Bethany H., Goudhurst
Tasker, A.N. *d.* University S., Southport
Nolan, J. St. Joseph's Coll., Dumfries
Benson, C.M. Yorkshire Society's S., Westminster Bridge Rd., S.E.
Jackson, F. *sh.* Private tuition
Latham, D.E. *ch.* St. Philip's Gram. S., Edgbaston
Barnett, H.A. Winchester H., Redland
O'Brien, J.R. *f.* St. George's Coll., Weybridge
Coape-Arnold, R. *d.* St. Joseph's Coll., Dumfries
Coucher, A.E. Polytechnic Secondary S., Regent St., W.
Ramagge, E. *sp.d.* Christian Bros.' Coll., Gibraltar
Brooks, A.R. Tollington Park S., N.
Piper, S.C. Bethany H., Goudhurst
Roberts, S.B. *d.* 92 Brunswick Street, Sheffield
Thomas, H. Ruthin Gram. S.
Murphy, M. St. Joseph's Coll., Dumfries
Phelan, E. St. Joseph's Coll., Dumfries
Schmidt, E.D. Stationers' Companys' S., Hornsey
Hutson, H.A. *d.* Christ's Coll., Blackheath
Colley, W.D. Bethany H., Goudhurst
Levy, J. Christian Bros.' Coll., Gibraltar
Gilfillan, J.M. Tollington S., Muswill Hill, N.
Hardiman, J.H. Newquay Coll.
Stanton, E.A. *d.* Private tuition
Gifford, M.C.M. Christ's Coll., Blackheath
Carruthers, W.K. Stationers' Companys' S., Hornsey
Gallop, C. *bk.* Tollington Park S., N.
Blackley, A.D. Polytechnic Secondary S., Regent St., W.
Delahunty, M. Catholic Coll. Inst., Manchester
Mills, G.W.C. Eye Gram. S.
Williamson, F.H. Portsmouth Council Boys' Secondary S.
Warrick, R.W. *ch.* Private tuition
Bourgeois, R. *f.* St. Joseph's Coll., Beulah Hill
Starkey, H.H. *d.* Brunt's Technical S., Mansfield
Williams, W.E. Dunheved Coll., Launceston
Gerrard, T. Catholic Coll. Inst., Manchester
Norris, W. Catholic Coll. Inst., Manchester
Holland, F. *d.* St. Joseph's Coll., Dumfries
Spranklin, S.J. St. John's Coll., Brixton
Ward, A. Brunt's Technical S., Mansfield
Kendrick, M.T. Private tuition
Burgess, H.A. Bethany H., Goudhurst
Glover, W.H. Private tuition
Kingsnorth, G.A. Dunheved Coll., Launceston
Banks, F.W. Bethany H., Goudhurst
Livermore, L.L. *d.* Tollington S., Muswell Hill, N.
Wakely, A.S. *al.* Private tuition
Docking, C.W. High S. for Boys, Croydon
Thompson, J.H. St. John's Coll., Brixton
Broadbent, J.W.D. Preston Gram. S., Stokesley
Cochrane, L.V. St. John's Coll., Brixton
Atkinson, E. Christ Church Hr. Grade S., Southport
Gomez, S. *sp.* Christian Bros.' Coll., Gibraltar
Westall, F.D. University S., Southport
Fitzwilliam, G.E. Tollington Park S., N.
Isaac, S.J. Private tuition
Lowder, H.G. Kensington Coaching C., Nevern Sq., S.W.
Martin, E.J. Gram. S., High Rd., E. Finchley
Paget, C.N. St. George's Coll., Weybridge
Hamilton, A.G. Central Foundation S., Cowper St., E.C.
Phelan, A. St. Joseph's Coll., Dumfries
Saunders, R. *bk.* Grove H., Highgate
Short, W.T. Bethany H., Goudhurst
Noble, C.F. Private tuition
Sweeting, R. St. John's Coll., Brixton
Thomson, H.C.S. Tollington Park S., N.
Law-Green, C.T. University S., Southport
Theobald, A. Dunheved Coll., Launceston
Kingston, C. Sec. S., Merchant Venturers' Tech. Coll., Bristol
Goldie, C.H. Lancaster Coll., W. Norwood
Hughes, T.H. High S., South Shore, Blackpool
Toner, J.B. St. Aloysius' Coll., Hornsey Lane, N.
Wharhirst, C.A. Stationers' Company's S., Hornsey

SECOND CLASS [or JUNIOR].

Honours Division.

Garner, H.M. *s.a.al.gm.f.* Market Bosworth Gram. S.
Woodward, A.E. *a.al.gm.ms.lt.ch.d.* Devonport P. T. Centre
Geary, A. *s.a.al.gm.d.* Market Bosworth Gram. S.
Nichols, A.R. *a.al.f.lt.d.* Portsmouth Council Boys' Secondary S.
Jones, C.E. *h.g.a.f.lt.d.* Portsmouth Council Boys' Secondary S.
Poad, F.H.L. *g.a.al.ch.d.* Devonport P. T. Centre
Kay, R. *g.a.al.lt.d.* Portsmouth Council Boys' Secondary S.
Shorthouse, F.J. *a.al.f.lt.ch.* Portsmouth Council Boys' Secondary S.
Jones, G. *s.g.a.al.gm.ms.d.* Buckingham Pl. Acad. Landport, Portsm'th
Roch, E.G. *a.al.d.* Portsmouth Council Boys' Secondary S.
Wilkinson, G.L. *h.al.f.* Private tuition
Morgan, A.L. *a.ch.d.* Pentre Higher Elem. S., Rhondda
Sheaff, J.M.C. *a.al.gm.lt.ch.* Devonport P. T. Centre
Warner, A. *h.a.al.f.ch.* St. Olave's Gram. S., Tower Bridge, S.E.
Bigg, S. *s.h.a.f.d.* Ashford Gram. S.
Durante, J. *al.bk.f.sp.d.* Christian Bros.' Coll., Gibraltar
Ravinet, V.J. *al.gm.bk.ma.* St. Joseph's Acad., Kennington Rd., S.E.
Cross, E.C. *g.gm.lt.ch.d.* Devonport P.T. Centre
Brown, S H. *a.d.* County S., Westbury
Ferrer, V. *sp.* St. Joseph's Coll., Dumfries
Ferriday, T.B. *h.al.phys.d.* High School, Leek
Fisher, E. *a.al.gm.ms.d.* Polytechnic Secondary S., Regent St., W.
McCandlish, W.E. *a.al.d.* University S., Southport
Isaac, W.G. *a.al.gm.ch.* Devonport P.T. Centre
Owens, F.H. *f.d.* Tollington S., Muswell Hill, N.
Threadingham, A. *a.al.lt.d.* Portsmouth Council Boys' Secondary S.
Hoenig, F.J. *al.ma.* St. Joseph's Acad., Kennington Rd., S.E.
Kimpton, G.H. *h.a.al.ma.d.* Northern Poly. Day S., Holloway Rd., N.
Brissenden, H. *h.f.ch.d.* Ashford Gram. S.
Timms, W. *al.gm.f.d.sh.* Catholic Coll. Inst., Manchester
Harris, N.C. *a.lt.d.* Portsmouth Council Boys' Secondary S.
Nustadt, A. *a.al.gm.ms.d.* Polytechnic Secondary S., Regent St., W.
Wells, F.G. *al.f.d.sh.* Sir Andrew Judd's Comm. S., Tonbridge
Rimmer, L. *al.f.d.* University S., Southport
Fountain, E.D. *a.al.f.* Private tuition
Farley, F.A. *g.a.f.ma.* Northern Poly. Day S., Holloway Rd., N.
Martin, S. *a.al.gm.* Devonport P.T. Centre
Temboury, P. *f.sh.* St. Joseph's Coll., Dumfries
Hinrich, E. *a.al.gm.f.* Polytechnic Secondary S., Regent St., W.
Hynes, J.E. *al.f.d.* Catholic Coll. Inst., Manchester
Meredith, R. *a.al.gm.f.* Polytechnic Secondary S., Regent St., W.
Morris, E.G. *al.lt.d.* Portsmouth Council Boys' Secondary S.
Cook, A.E. *a.lt.d.* Portsmouth Council Boys' Secondary S.
Platt, H. *a.al.gm.f.d.* Hindley and Abram Gram. S., Hindley
Dobbins, W.F. *a.al.ch.* Redditch Secondary S.
Moore, F.T. *a.al.d.* Portsmouth Council Boys' Secondary S.
Wilder, J.R. *a.phys.d.* L.C.C. Paddington Tech. Inst. Sec. S.
Earl, A. *al.f.ch.d* Ashford Gram. S.
Thompson, A.E.S. *a.al.gm.bk.* Polytechnic Secondary S., Regent St., W.

BOYS, 2ND CLASS, HONS.—*Continued.*

Church, A.S. *gm.lt.* Devonport P.T. Centre
Grant, H.R. *a.gm.* Devonport P.T. Centre
Tappenden, W.G. *al.f.ch.d.* Ashford Gram. S.

Dowding, E.J. *a.* Taunton's S., Southampton
Nicholson, W.R.I. *al.bk.d.* Polytechnic Secondary S., Regent St., W.

Gibson, S. *a.al.* St. John's Coll., Green Lanes, N.
Waller, F.W. *al.bk.d.* Tollington Park S., N.

Johnstone, W.H.P. *a.al.d.* Arnot St. Higher Grade S., Walton, L'pool
Mace, R.C. *f.d.* Ashford Gram. S.
Schmidt, P.R.J. *al.ge.ch.d.* St. Paul's S., W. Kensington

Kingsnorth, R.F.H. *h.f.d.* Ashford Gram. S.
Lewis, I.E. Wadham S., Liskeard
Richards, C.T. *al.bk.* Gram. S., Newton Abbot

Bates, H. *al.bk.d.* Polytechnic Secondary S., Regent St., W.
Friend, R. *a.al.d.* Stafford Coll., Forest Hill

Giles, F. *al.d.* University S., Rochester
Harriss, P.W. *a.al.ma.* Northern Poly. Day S., Holloway Rd., N.

Byrom, W. *h.a.al.gm.d.* Stalybridge Technical Day S.
Cox, A.L. *a.al.ma.* Northern Poly. Day S., Holloway Rd., N.
Jenkins, W.C. *a.al.ma.* Northern Poly. Day S., Holloway Rd., N.
Williams, W.C. *s.al.* Bible Christian Coll., Shebbear

Edwards, J. *ma.d.* Pentre Higher Elem. S., Rhondda
Haycraft, G.N. *a.ma.* Northern Poly. Day S., Holloway Rd., N.
Nicholas, F. *a.* Taunton's S., Southampton
Vickers, H. *f.ch.d.* St. Paul's S., W. Kensington

Norman, W.H. *g.a.d.* Northern Poly. Day S., Holloway Rd., N.
Whitehouse, P. *ch.d.* Devonport P.T. Centre

Essex, W.V. *a.gm.* Hawkesyard Coll., Rugeley
Gullick, N.D. Bible Christian Coll., Shebbear
Lovelock, B.V. *al.d.* Portsmouth Council Boys' Secondary S.

Jones, E. *al.gm.ch.d.* Ferndale Secondary S., Rhondda
Sills, W.W. *al.d.* Portsmouth Council Boys' Secondary S.
Sowerby, E.S. *a.al.f.* King Edward's S., Bath

Friend, C.R. *a.al.gm.* Merthyr Tydfil Advanced Elem. Boys' S.
Morris, T. *a.al.d.* Hindley and Abram Gram. S., Hindley
Oxen, F.D. *d.* Hermitage S., Grimsargh, Preston
Frawley, P.J. *al.bk.f.d.* Catholic Coll. Inst., Manchester

Bisiker, A.M. *h.f.d.* Tollington Park S., N.
Hall, C.H. *al.ma.* Culham College S., Abingdon
Holden, J.A. *al.* Market Bosworth Gram. S.
Rogers, F. *al.d.* Bible Christian Coll., Shebbear
Course, P.R. *gm.lt.* Tollington S., Muswell Hill, N.

Hurworth, A. Training C. Model & Higher Grade S., York
Jones, A.F. Gram. S., Eccles
Wilks, D.J. *ms.d.* Merthyr Tydfil Advanced Elem. Boys' S.

Goodall, A. *al.f.ma.d.* Northern Poly. Day S., Holloway Rd., N.
Robinson, H.A. *a.al.d.* Polytechnic Secondary S., Regent St., W.

Boocock, J.T. Training Coll. Model and Higher Grade S., York
Dorman, S. *d.* Ashford Gram. S.

Hammond, C.H. *a.d.* University S., Southport
Moore, H.W. *bk.d.* The Philological S., Southsea
Wilson, J. *s.g.d.* Bethany H., Goudhurst

Broad, S.J. *a.al.gm.* Private tuition
Rashbrook, S.O. *a.al.f.* Devonport High S.

Davies, T.M. *ch.d.* Ferndale Secondary S., Rhondda
Hymers, B. *f.ch.d.* Ashford Gram. S.
Johns, W.A. *a.d.* Private tuition
Jones, T. (A) *al.gm.d.* Merthyr Tydfil Advanced Elem. Boys' S.

McEwan, D.B. *al.ms.* Gram. S., Highworth
Turner, E.J. *bk.d.* Bible Christian Coll., Shebbear

Barstow, E.W. *al.d.* Northern Poly. Day S., Holloway Rd., N.
McCormack, E.H. *a.f.* Southport Modern S.
Thompson, C. *a.al.d.* West Bridgford Higher Grade Council S.

Farmer, R.N. *al.d.* Bethany H., Goudhurst
Guise, E.S. Redditch Secondary S.
Lee, E.C. *a.* Bible Christian Coll., Shebbear

Cowlishaw, G.D. *f.d.* Market Bosworth Gram. S.
Huntley, H.E. *d.* The College, Weston-super-Mare

Bainbridge, S. *a.sh.* Carlisle Higher Grade S.
Harratt, J.H. *a.* Market Bosworth Gram. S.
Innes, H.S. *f.* Tollington Park S., N.
Lawrence, D.M. *h.* Tollington Park S., N.
O'Brien, J.J. *al.* St. George's Coll., Weybridge

Attwood, W.W. *al.d.* Market Bosworth Gram. S.
Budden, H.W. *phys.* High School, Leek
Newton, A. *sh.* Polytechnic Secondary S., Regent St., W.
Pater, J.J. *a.* St. Aloysius' Coll., Hornsey Lane, N.
Scott, S. Gram. S., Camelford
Sims, A.H.E. *a.* Northern Poly. Day S., Holloway Rd., N.
Weir, K.S. *ms.phys.d.* Esplanade H., Southsea
Yates, E.C. *a.d.* Gram. S., Eccles

Grylls, G. *d.* St. Paul's S., W. Kensington
Lamb, D.C. *bk.d.* Lindisfarne Coll., Westcliff-on-Sea
Marchington, E.W. *al.* Tollington S., Muswell Hill, N.
Whelan, H.M. *phys.* Private tuition

Davies, J. *d.* Pentre Higher Elem. S., Rhondda
Hartnell, W.J. *a.lt.d.* Huish Gram. S., Taunton
Partington, G. *a.al.gm.d.* Hindley and Abram Gram. S., Hindley
Sawer, J. *d.* Eastward Ho! Coll., Felixstowe
Shaw, C.L. Bible Christian Coll., Shebbear
Steele, R.R. *a.al.f.* Private tuition
Young, J. *d.* Taunton's S., Southampton

Cripps, J. *a.al.* Northern Poly. Day S., Holloway Rd., N.
Fish, B.E. *al.f.* Tollington S., Muswell Hill, N.
Gorrity, F. *f.sp.* St. Joseph's Coll., Dumfries
Ward, W.J. St. Philip's Gram. S., Edgbaston

Ashbrook, G.W. *d.* Gram. S., Eccles
Craig, G.R. *d.* Private tuition
Elton, F.J. Taunton's S., Southampton
Hall, F.R. *d.* Victoria Inst., Worcester
Harrison, S.H. *gm.d.* Market Bosworth Gram. S.
Morton, P.M. *s.* Orient Coll., Skegness
Perkins, F.H. *al.* Gram. S., Quorn
Pettifor, D.S. *a.al.f.d.* Market Bosworth Gram. S.

Cox, F.V. *a.* Northern Poly. Day S., Holloway Rd., N.
Sheldon, F.J. *f.* Montrose Coll., Streatham Hill
Taylor, F.L. Market Harborough Gram. S.

Broad, W.E.L. *f.d.* Private tuition
Jones, L.W. *al.d.* Pentre Higher Elem. S., Rhondda
Lunn, H.J. Taunton's S., Southampton
Richards, F.W.M. *a.d.* Tollington Park S., N.

Caston, R.K. *d.* Eastward Ho! Coll., Felixstowe
Dancer, G.U.J. *a.al.* 12 Malvern Rd., Southsea
Monkcom, H.C. *a.* Portsmouth Council Boys' Secondary S.
Trussler, K.L. *phys.d.* L.C.C. Paddington Tech. Inst. Sec. S.

Norton, F. *a.* Hawkesyard Coll., Rugeley
Tackley, W.A. Tollington S., Muswell Hill, N.
Wall, B.P. *f.d.* Sir Andrew Judd's Comm. S., Tonbridge

Golden, D.P. *f.d.* St. Joseph's Coll., Dumfries
Harvey, B.M. *d.* Devonport P.T. Centre
Hindsley, F.G. Tollington S., Muswell Hill, N.
Lees, F.C. St. Philip's Gram. S., Edgbaston

Badger, C.W. Ludlow Commercial S.
Bradley, P.S. *al.* Northern Poly. Day S., Holloway Rd., N.
Harnden, W.A. University S., Rochester
Harris, G.G. Montrose Coll., Streatham Hill
Hill, N.B. *a.al.d.* Stoke Public Higher S., Devonport
Johnson, S. *al.f.* University S., Southport
Strugnell, R.W. *s.* Montrose Coll., Streatham Hill

Cresswell, H. *ma.d.* Pentre Higher Elem. S., Rhondda
Seymour, L. *a.al.f.* Private tuition

Austin, J.L. *a.* Colebrook H., Bognor
Broom, R.J.C. Modern S., East Grinstead
Budge, W.E. *al.* Stoke Public Higher S., Devonport
Hooper, W.A. *d.* West Bridgford Higher Grade Council S.

Armstrong, S. *a.al.* Todd's Nook Council S., Newcastle-on-T.
Beer, E.E. *g.a.gm.* Devonport P.T. Centre
Lloyd, J. *al.f.* Private tuition
Lovering, P.W. Private tuition

Lewis, L. *gm.d.* Merthyr Tydfil Advanced Elem. Boys' S.
Mexia, C. *f.sp.* Catholic Coll. Inst., Manchester
O'Connell, M. *a.* Catholic Coll. Inst., Manchester

Thompson, H.J. *d.* Horsham Gram. S.
Turner, L.H. *d.* Dunheved Coll., Launceston

Coath, H.S. *al.bk.f.* Wadham S., Liskeard
Davies, W. *al.ma.* Porth Higher Grade S.
Roberton, G.H. *d.* Arnot St. Higher Grade S., Walton, L'pool
Seager, H.L.B. *d.* University S., Rochester
Whipp, R.P. *al.* Market Bosworth Gram. S.

Heath, E.H. *a.* High S., Leek
Ison, J.E. *a.* Market Bosworth Gram. S.
Lewis, W. *al.d.* Pentre Higher Elem. S., Rhondda
Murray, S.E. *h.f.* Argyle H., Sunderland
Palfreeman, H. *d.* Brunt's Technical S., Mansfield

Brown, K.G. Tollington Park S., N.
Butt, J.B. *al.ch.* Dulwich College
Campbell, S. *f.* Intermediate S., Ballyclare
Decker, G.W. *a.* St. Joseph's Acad., Kennington Rd., S.E.
Garrett, A.A. *a.d.* Sir Andrew Judd's Comm. S., Tonbridge
Gavin, P.A.L. *ch.* St. Philip's Gram. S., Edgbaston
Morse, S. Pentre Higher Elem. S., Rhondda

Batten, K. *a.* Bible Christian Coll., Shebbear
Forster, L.E. St. Francis Xavier's Coll., Liverpool
Francis, G. *d.* Brunt's Technical S., Mansfield
James, R.S. *a.* Tavistock Gram. S.
Kinnell, A. *d.* Eastward Ho! Coll., Felixstowe
Lascelles, H. *f.* Sir Andrew Judd's Comm. S., Tonbridge
Pilgrim, W. *d.* Gram. S., Quorn
Tung, H.A. *d.* Sandyford Rd. Council S., Newcastle-on-T.

SECOND CLASS [or JUNIOR].

Pass Division.

[1]Corbett, C.H. Eye Gram. S.
[1]Toop, S.A. *ms.* Portsmouth Council Boys' Secondary S.

[1]Anderson, C. Argyle H., Sunderland
[1]Parker, E.J.T. Devonport P.T. Centre

[1]Penny, W.N. *d.* The College, Weston-super-Mare
[1]Thomson, H.J. *d.* Private tuition
[1]Waller, H.T. *d.* Thorne Gram. S.
[1]Davis, E. Dunheved Coll., Launceston
[1]Browne, A.G. Brondesbury Coll., N.W.
[1]Dishman, L. Thorne Gram. S.

[1]Jenkin, A. Dunheved Coll., Launceston
[1]Windus, C.E. St. John's Coll., Brixton

Bretherton, A.A. *a.f.d.* Christ's Coll., Blackheath
Burton, C.N. *d.* Tollington Park S., N.
Daws, E.W. Lindisfarne Coll., Westcliff on-Sea
Filmer, E.S. Tollington Park S., N.
Matson, O. *f.* The Modern S., East Grinstead
Pearce, H.V. *d.* Devonport P. T. Centre
[1]Spoor, T.A. Private tuition
[1]Stone, E. *ms.* Private tuition
Williams, W.J. *bk.* St. John's Coll., Green Lanes, N.

Draper, F.C. *a.al.* The Modern S., East Grinstead
Francis, R.V. *a.d.* Acton County S., Acton
Jones, E.I.W. *s.* Ruthin Gram. S.
King, F.C. *d.* Arnot St. Higher Grade S., Walton, L'pool
[1]Newbery, B.C. St. George's Coll., Weybridge
Pindar, R.J. Wilson Coll., Stamford Hill
Stears, F.D. Tollington Park S., N.
Way, G.H. Arnot St. Higher Grade S., Walton, L'pool

Craze, W.C.T. *al.* Gram. S., Hayle
Greene, J. *al.f.* Gram. S., Wolverhampton
Hazell, W.S. *f.* Private tuition
[1]Jones, C.V.H. Private tuition
Lawrey, A. Gram. S., Hayle
MacMillan, J.D. *f.* Catholic Coll. Inst., Manchester
Pitt, V.D. *d.* St. Andrew's Hr.-Grade S., Worthing
Smith, H.L. Private tuition

Beer, H. Bible Christian Coll., Shebbear
Hall, F.B.L. *f.* Mercers' S., Holborn
Hornby, F. *a.* Brunt's Technical S., Mansfield
Osmer, T.S. *a.al.* Sir Walter St. John's S., Battersea
Pratt, P.C. St. Philip's Gram. S., Edgbaston
Sandford, L. *al.* Fartown Gram. S., Huddersfield

Acres, S.B. *al.d.* Lindisfarne Coll., Westcliff-on-Sea
[1]Berry, W.G. P.T. Centre, Brierley Hill
Bonner, E.J. *d.* Taunton's S., Southampton
Border, R. Gram. S., Dawlish
Brown, H.V. Manchester Gram. S.
[1]Cloake, J. Sir Andrew Judd's Comm. S., Tonbridge
Curry, W.H. *a.* Yorkshire Society's S., Westminster Bridge Rd., S.E.

Eldridge, C.H. Lindisfarne Coll., Westcliff-on-Sea
Ewen, P.J. *d.* St. Joseph's Coll., Dumfries
Ford, E. *al.d.* Municipal Secondary S., Brighton
Fullilove, G.A. *d.* Market Harborough Gram. S.
Harvey, F.W. *a.* Market Bosworth Gram. S.
Jenkins, A.E. *al.* Colebrook H., Bognor
MacClymont, C.G. *a.* Brentwood High S.
[1]Mellor, J. Private tuition
Peatfield, P.J. Private tuition
Tate, T.C. Colebrook House, Bognor
Thorne, D. *h.* Private tuition
Williams, B. Ferndale Secondary S., Rhondda

Evans, J.M. Pentre Higher Elem. S., Rhondda
Ivens, L.F. *f.* St. Aloysius' Coll., Hornsey Lane, N.
Silkstone, S.G. Polytechnic Secondary S., Regent St., W.
Wray, C.J. Tollington S., Muswell Hill, N.

Arnold, B.P. *d.* St. Philip's Gram. S., Edgbaston
[1]Basker, H.R. Hazelcroft, Weston-super-Mare
[1]Hull, V.G. Portsmouth Council Boys' Secondary S.
Newton, R.C. Barton S., Wisbech
Sleep, J.H. Tavistock Gram. S.

[1]Ballinger, L. Dunheved College, Launceston
Darley, W.F. *al.* Hawkesyard Coll., Rugeley
Laurens, E.J. Bible Christian Coll., Shebbear
Lewis, I. Pentre Higher Elem. S., Rhondda
Lowe, G.P. *al.* Arnot St. Higher Grade S., Walton, L'pool
Luke, P.L. *d.* Bible Christian Coll., Shebbear
Ramsbottom, R. *f.d.* University S., Southport
Scott, T.B. *d.* Ashford Gram. S.

Cowling, K.E. *f.* St. George's Coll., Weybridge
Crompton, A.A. Southport Modern S.
Denness, R.B. Taunton's S., Southampton
Green, B. *d.* Catholic Coll. Inst., Manchester
Herbert, H. Brunt's Technical S., Mansfield
[1]Hillier, J.S. Hillmartin Coll., Busby Place, N.W.
Linzee, J.I. Woolston Coll., Southampton
Roulson, G. *al.d.* Gram. S., Belper
Shore, H.D. *f.* Private tuition
Walsh, M. *a.* Skerry's Coll., Liverpool

Argles, E.B. Private tuition
[1]Boyd, W. Private tuition
[1]Chambers, G.F. Lady Hawkins' Gram. S., Kington
Corfield, C.E. Ludlow Commercial S.
Hopper, R.F. *a.al.f.* Private tuition
Horne, J.A. *f.* Ashford Gram. S.
Jones, T.(B.) *ma.d.* Merthyr Tydfil Advanced Elem. Boys' S.
Mudge, A.E.P. Private tuition
[1]O'Donnell, E. *d.* St. George's Coll., Weybridge
[1]Pledge, R.S. *bk.* St. Winifred's S., Torquay

Ashworth, B.J. *a.* Hawkesyard Coll., Rugeley
Bernstein, D.C. *al.f.* King Edward's High S., Birmingham
Byard, S. *d.* Brunt's Technical S., Mansfield
Esilman, A. Private tuition
[1]Jones, G.H. Private tuition
Jones, T.D. *a.al.* The Modern S., Oswestry
[1]Kelly, C.P. St. George's Coll., Weybridge
Leyva, M. Christian Bros.' Coll., Gibraltar
McDonald, R.A. *d.* Arnot St. Higher Grade S., Walton, L'pool
Ossorio, J. Christian Bros.' Coll., Gibraltar
Shrimpton, A.H.N. The College, Weston-super-Mare
Steptoe, H.N. *lt.* Portsmouth Council Boys' Secondary S.
Tresidder, C.T. *a.f.* Private tuition
Wetz, H.J. *f.* St. Aloysius' Coll., Hornsey Lane, N.
Whitford, J. *d.* St. Austell Pupil-Teacher Centre

Black, J. *d.* Todd's Nook Council S., Newcastle-on-T.
Butler, A.N. *d.* Dunheved Coll., Launceston
[1]Carter, A.K. African Training Inst., Colwyn Bay
Clarke, K.B. Private tuition
Johnston, D.H. *d.* Carlisle Higher Grade S.
Mainhood, A.E. Winchmore Hill Coll. S.
Newsome, F.E. Bible Christian Coll., Shebbear
Rees, J.E. Gram. S., Pencader
Shearer, J. *a.* Todd's Nook Council S., Newcastle-on-T.
Theobald, R. University S., Rochester
[1]Thompson, L. St. Boniface's Coll., Plymouth
[1]Wintersgill, D.A. Yorkshire Society's S., Westminster Bridge Rd., S.E.

BOYS, 2ND CLASS, PASS—*Continued.*

Alexander, C.B. Private tuition
Catlow, R.S. *a.al.* University S., Southport
Harris, J. Market Bosworth Gram. S.
[1]Kemp, A.D. Brondesbury Coll., N.W.
[1]Kendon, F.H. Bethany H., Goudhurst
Kevern, J.P.L. *f.* High S., St. Luke's Rd., Torquay
Smith, A.L. University S., Southport
Steele, J.R. *d.* University S., Rochester

Gallen, R.A. *s.* Ruthin Gram. S.
McCubbin, J.McC. Catford Coll. S., Lewisham
Owen, W.P. *d.* Arnot St. Higher-Grade S., Walton, L'pool
[1]Parsons, W. St. Joseph's Coll., Dumfries
Porter, J.A. Arnot St. Higher Grade S., Walton, L'pool
Quin, J.J. *a.al.d.* Catholic Coll. Inst., Manchester
Wilson, C.B. *d.* Penzance P. T. Centre

Baker, W.V. *al.* Bethany H., Goudhurst
Brine, P.J.F. *h.* Ashford Gram. S.
[1]Cross, J.R. Wadham S., Liskeard
Earl, W. *d.* Todd's Nook Council S., Newcastle-on-T.
Harrhy, T.A. *d.* Pentre Higher Elem. S., Rhondda
Laity, G.W. Penzance P.T. Centre
Pope, J.H. *al.* University S., Rochester
Roberts, G.M. *f.* Private tuition
Williams, E.R. 38 Tavistock Place, Plymouth
Williams, O.G. *al.* St. Aloysius' Coll., Hornsey Lane, N.

Brown, G. Brunt's Technical S., Mansfield
Coates, H.B. St. Joseph's Acad., Kenuington Rd., S.E.
Hancock, T.W. Private tuition
[1]Holderness, H.B. *d.* Central Classes, Long Sutton
Huggons, A.F. Tollington S., Muswell Hill, N.
Mead, D. Huish Gram. S., Taunton
Meade, J.A. Hawkesyard Coll., Rugeley
Richardson, J. *gm.* Todd's Nook Council S., Newcastle-on-T.
Stroughair, W.W. Carlisle Higher Grade S.
West, L. *al.d.* Market Harborough Gram. S.
Willcox, F.H. *d.* University S., Southport
Williams, J.P. Porth Higher Grade S.

Davies, W.R. *f.* Porth Higher Grade S.
Hogan, J.A.C. *al.* Sandbach School
Spalton, F.L. Yorkshire Society's S., Westminster Bridge Rd., S.E.
Wyborn, A.H.S. Private tuition
Wyborn, C.T.B. Private tuition

Adams, S. Private tuition
Challice, G.W. Bible Christian Coll., Shebbear
Dale, H. *d.* Lindisfarne Coll., Westcliff-on-Sea
Gough, W.P. *al.* Merthyr Tydfil Advanced Elem. Boys' S.
Hector, W.J. St. Joseph's Acad., Kenningtou Rd., S.E.
Matthew, A.W. *al.* Hackney Downs S., Clapton
Thornton, R.H. St. Joseph's Coll., Dumfries
[1]Wyatt, F.S. St. John's Coll., Brixton

Beardsley, G.W. Netherthorpe Gram. S., Staveley, Chesterfield
[1]Copplestone, T.S. Bible Christian Coll., Shebbear
Farrant, S.G. Tudor Hall, Hawkhurst
[1]Stockley, C.I. High S. for Boys, Croydon
Wilson, J. *f.* University S., Southport

[1]Boutwood, R. *f.* Private tuition
Candelot, F. *f.d.* Polytechnic Secondary S., Regent St., W.
Jones, H.O. *d.* Merthyr Tydfil Advanced Elem. Boys' S.
Martin, P. St. Joseph's Coll., Dumfries
[1]McGuinness, P. St. Joseph's Coll., Dumfries
Milnes, H. Yorkshire Society's S., Westminster Bridge Rd., S.E.
Moore, J.R. *f.* Newcastle Modern S.
Twigg, D.S. Palmer's S., Grays
Waters, R.A. Private tuition
Whiting, S.K. *al.d.* Tollington Park S., N.

Carnegy, P.C.A. Eversley S., Southwold
Clews, R.T. Ruthin Gram. S.
Hall, J. Carlisle Higher Grade S.
Kelly, A. St. George's Coll., Weybridge
McCormick, A.E. *a.* Tollington S., Muswell Hill, N.
[1]Nixon, J.B. Newcastle Modern S.
Saint, S.O. Tollington Park S., N.

Baker, G. *f.* Private tuition
Bell, R. University S., Southport
Bradley, F.A. Catholic Coll. Inst., Manchester
[1]Bridle, E.C. Chichester Lancastrian S.
[1]Burn, J.H. Battle Hill S., Hexham
James, J. Wadham S., Liskeard
Tippen, L.G. *f.* Ashford Gram. S.

Allman, F.G. *a.d.* Gram. S., Chorlton-cum-Hardy
Gow, D.N. *f.d.* Polytechnic Secondary S., Regent St., W.
Hobson, S.T. *d.* West Bridgford Higher Grade Council S.
Patten, W.T. Catholic Coll. Inst., Manchester
Richards, C. St. Philip's Gram. S., Edgbaston
Rowlands, S. *d.* Pentre Higher Elem. S., Rhondda
Vick, G.K. Tollington S., Muswell Hill, N.
Walker, F.W. *d.* Tollington S., Muswell Hill, N.
[1]Wyatt, L.J. St. John's Coll., Brixton

Blakemore, W.H. *f.* Denstone College
Carter, C.A. York Manor S., York
Dillon, H.C. Berkhamsted School
Firth, S.H. Tollington Park S., N.
Holland, H.D. St. Joseph's Coll., Dumfries
Jones, L.O. Lindisfarne Coll., Westcliff-on-Sea
Knight, C.E. Colebrook H., Bognor
Moore, J. Catholic Coll. Inst., Manchester
Paterson, R.G. *f.* Bedford Gram. S.
Plumb, A. *a.al.* Preston Classical, Mathematical & Comm. S.
Storey, N. Todd's Nook Council S., Newcastle-on-T.
Taunton, T.J. Private tuition

Craig, L.G. Tollington S., Muswell Hill, N.
Jones, E.D. Pentre Higher Elem. S., Rhondda
Moore, F.W. Tollington S., Muswell Hill, N.
Timson, S.G. *a.gm.f.* Private tuition
Wilson, A.R. *bk.d.* Lady Hawkins' Gram. S., Kington

Anderson, A.E. *d.* York Manor S., York
Dunster, H. *a.d.* Private tuition
Evans, W.J. *d.* Pentre Higher Elem. S., Rhondda
Jenkin, W.P. *d.* Penzance P.T. Ceutre
Knight, H. *a.al.f.* Private tuition
Mullin, R.H. St. George's Coll., Weybridge
Singleton, W.J. Keble H., Blackpool
Slack, W.R. Scorton Gram. S.

[1]Adderley, A. The Academy, Wakefield
Bellairs, J.B. *f.* St. George's Coll., Weybridge
Bettesworth, H. *d.* Arnot St. Higher Grade S., Walton, L'pool
Cloud, W.H. *a.al.gm.f.* Private tuition
Gould, W.H.F. Tavistock Gram S.
Mears, G.F. Portsmouth Council Boys' Secoudary S.
Spencer, S. Brunt's Technical S., Mansfield
Whelan, R.P. St. Aloysius' Coll., Hornsey Lane, N.

Bamford, C. St. Joseph's Coll., Dumfries
Cox, P.R. Private tuition
Day, L.A. Hillmartin Coll., Busby Place, N.W.
[1]Essex, E.B. Stationers' Co.'s S., Hornsey
Foster, G. Ludlow Commercial S.
Hoskius, L.W. St. Aloysius' Coll., Hornsey Lane, N.
Kilkenny, A.J. St. Aloysius' Coll., Hornsey Lane, N.
Matthews, T.F.G. Penzance P.T. Centre
Miller, J.D. Catford Coll. S., Lewisham
Philips, C.H. Wynport H., Brighton
Sullivan, D. *d.* Ferndale Secondary S., Rhondda
Wallis, A. Tynemouth School

[1]Dodd, E.E. Bethany H., Goudhurst
Head, B.W. *d.* Lady Hawkins' Gram. S., Kington
Hutchinson, W.E. Eversley S., Southwold
Jones, T. Ferndale Secondary S., Rhondda
Lillywhite, H.C. St. Mary's Coll., Harlow
Norgate, R.C.H. *al.* Devonport High S.
Piggott, W.T. St. Aloysius' Coll., Hornsey Lane, N.
Roberts, E.R. Private tuition
Sterwin, R.F. *f.* Bethany H., Goudhurst
Swift, P.S. Lindisfarne Coll., Westcliff-on-Sea

Bryant, S.E. Rye Gram. S.
Dinmock, J.B. Grove H., Highgate
Duffell, G.O. St. Joseph's Coll., Dumfries
Meinertzhagen, F. *a.f.* Private tuition
Mills, C.G. Fartown Gram. S., Huddersfield
Seager, F.H. *a.* St. Augustine's Coll., Ashford
Spong, R.W. *al.* Private tuition

Aitken, G.H. West Bridgford Higher Grade Council S.
Berry, H.H.F. Tollington S., Muswell Hill, N.
Gregson, F.L. *d.* Scorton Gram. S.
[1]Oliver, B.H. P. T. Centre, Brierley Hill
[1]Posso, J. Christian Bros.' Coll., Gibraltar
Ridley, H.W. The Modern S., East Grinstead
Sewell, W. St. Philip's Gram. S., Edgbaston
Singleton, J. *a.* Longwood Gram. S., Huddersfield
[1]White, B. Hawkesyard Coll., Rugeley

Alexander, A.J. St. George's Coll., Weybridge
Bartlett, H.S. *a.* Market Harborough Gram. S.
Chantler, W.G. Bethany H., Goudhurst
Chauffourier, V.M.D. *a.f.* Private tuition
Forber, E. *d.* Catholic Gram. S., St. Helens
Holland, C.S. University S., Southport
King, J.H. Private tuition
Radford, S.C. Private tuition
Walker, K.M. *ch.* Eye Gram. S.
Williams, E. Pentre Higher Elem. S., Rhondda

Allen, H. Todd's Nook Council S., Newcastle-on-T.
Bell, A. *d.* Carlisle Higher Grade S.
Clough, W.O. St. Joseph's Coll., Dumfries
Conway, D. The College, Weston-super-Mare
Eley, E.E. West Bridgford Higher Grade Council S.
Ferguson, R.A. *al.* Mercers' S., Holborn, E.C.
Harness, C.B. Northern Poly. Day S., Holloway Rd., N.
King, T. St. Boniface's Coll., Plymouth
Pinard, A.L. *f.* St. Boniface's Coll., Plymouth
[1]Saunders, W. St. Joseph's Coll., Beulah Hill
Trotter, J. *f.* Cleave's S., Yalding
Vaisey, G.M. Private tuition

Barker, J. Brunt's Technical S., Mansfield
Bryan, H.S. *d.* Lindisfarne Coll., Westcliff-on-Sea
Craddick, H.S. *a.* Devonport P.T. Centre
Gordon, M. *f.* Private tuition
Proctor, W. *ma.* Brunt's Technical S., Mansfield
Wakley, P.J. Private tuition

Dowell, T. Carlisle Higher Grade S.
Gostick, W.L. *d.* Netherthorpe Gram. S., Staveley, Chesterfield
Hart, C.H. Wilson Coll., Stamford Hill
Reed, R.O. *d.* Penzance P.T. Centre

Browning, R.J.S. Newton Coll., Newton Abbot
Davies, E.M. *al.f.* Old College S., Carmarthen
Hughes, H.R. Ruthin Gram. S.
Pegler, H.J. Private tuition
Westland, W.R. *d.* Tollington Park S., N.
Wilson, C.H. Private tuition

Atherton, E. *d.* Arnot St. Higher Grade S., Walton, L'pool
Bailey, L.G. Gram. S., Eccles
Baker, J.F. University S., Southport
Blewett, S.C. Penzance P.T. Centre
Clark, J.D. Battle Hill S., Hexham
Davis, F.W. Eastward Ho! Coll., Felixstowe
Daykin, S. *d.* Brunt's Technical S., Mansfield
[1]Fletcher, G.H. P.T. Centre, Brierley Hill
Glaisby, L.N. Private tuition
Jackson, F. Bowdon College
Long, N.S. Stafford Coll., Forest Hill
Mackay, B.W. St. George's Coll., Weybridge
Silley, H.H. Lindisfarne Coll., Westcliff-on-Sea
Tate, H. Longwood Gram. S., Huddersfield
Topp, J.M. Sandyford Rd. Council S., Newcastle-on-T.

Ashlen, H.J. St. Aloysius' Coll., Hornsey Lane, N.
Humphreys, J.S. Merthyr Tydfil Advanced Elem. Boys' S.
North, S. Tollington Park S., N.
Ord, H. Skerry's Coll., Newcastle-on-Tyne
Vaisey, C.N. Schorne S., Winslow

Moakler, R.J. St. Philip's Gram. S., Edgbaston
Morris, H.E. Bible Christian Coll., Shebbear
Noott, G. Private tuition
Oliver, H.J. Alton H., Blackheath
Wainwright, E.A. *al.* The Modern S., Oswestry
Walford, E. Oxford H., Junction Rd., N.
White, C.L.B. Llandovery College
Wilson, A. *bk.* Barton S., Wisbech

Allchin, G.C. Belmont H., Walmer
Findlay, A.S. Private tuition
Hickman, H. Market Harborough Gram. S.
Murphy, L.P. St. George's Coll., Weybridge
Newsham, T. Christ Church Higher Grade S., Southport
Place, T.K. Sandbach School
Pool, G.W. Gram. S., Hayle
Slatford, C.C. High S. for Boys, Sutton
Toone, H. *d.* Brunt's Technical S., Mansfield
Vergette, T. Barton S., Wisbech

Adams, A.A. Longfleet High S., Poole
Bates, E.H. London Coll. for Choristers, Paddington
Davey, W. Cleave's S., Yalding
Gregory, T. Todd's Nook Council S., Newcastle-on-T.
Thompson, W.G. Private tuition
Waller, A.F. Magnus Gram. S., Newark
Wright, L.H.K. *al.* Civil Service & Shorthand S., Portsmouth

Bury, A. Private tuition
Carter, S.T. *f.* Willowfield Higher Grade S., Eastbourne
Claff, W. *al.* Private tuition
Dance, L.A. *f.* Sir Andrew Judd's Comm. S., Tonbridge
Deeks, W.J.B. Eastman's, Winchester
Hitchcock, C.H. *f.* Sir Andrew Judd's Comm. S., Tonbridge
Murless, R.A. *al.* Wilton Grove S., Taunton
Parry, E.I. Private tuition
Reese, J.T. *al.f.* Private tuition
Root, A.C. *al.* Lancaster Coll., W. Norwood

Bingham, H.J. *d.* Brunt's Technical S., Mansfield
Cooper, T.P. Private tuition
Fawcett, F.H. *d.* Private tuition
Gardner, E.V.G. Stafford Coll., Forest Hill
Harrison, H.E. University S., Rochester
Lloyd, R.H. Ruthin Gram. S.
Revill, H. Netherthorpe Gram. S., Staveley, Chesterfield
Smithson, E. Archbishop Holgate's Gram. S., York.

Bowyer, W.C. The Modern S., Oswestry
Churchill, J. St. Joseph's Coll., Dumfries
Duthy, H.A. Private tuition
Gill, S.R.M. Private tuition
Heath, S.P. Longsight Gram. S., Manchester
Johnson, J.A.F. St. Helen's Coll., Southsea
Lawrence, F.W. Private tuition
Morgan, W.A. St. Joseph's Coll., Dumfries
Nicoll, G.S. *d.* Carlisle Higher Grade S.

Barry, W.H. Rye Gram. S.
Bracking, E.F. *d.* Central Classes, Long Sutton.
Davies, A. Porth Higher Grade S.
Homer, L.G. Lady Hawkins' Gram. S., Kington
Loseby, G. Market Bosworth Gram. S.
Miller, J.A. University S., Rochester
Noll, M.G. *al.* Private tuition
Parsonage, F.H. Nantwich & Acton Gram. S., Nantwich
Swann, H.S. Private tuition

Bird, A.A. Acton County S., Acton
Holmes, S. Ludlow Commercial S.
Kelley, E.B. Private tuition
Morrey, C.A. Lancaster Coll., Morecambe
Sadler, F.G. Bethany H., Goudhurst
Veale, J.R. Tavistock Gram. S.
Wallis, H. *al.* Private tuition

Blake, L.O. Penhale Rd. Boys' Council S., Fratton
Craig, B.F.W. *bk.* Rye Gram. S.
Marmion, J.P. *gm.* Private tuition
Wagstaff, C. Private tuition

Carrington, V.C. Private tuition
Greenough, E.E. *d.* Atherstone Gram. S.
Groves, H.F.R. *d.* Huish Gram. S., Taunton
Perkins, D.L. *s.* Colebrook H., Bognor
Swire, F. Private tuition

[1]Brown, G.T.S. Winchester H., Redland
Davidson, A.L. Private tuition
Healy, H.L. Kensey, Launceston
Hemming, F. *ch.* Private tuition
Kendrick, W. *f.* Private tuition
Wickenden, R.M. *d.* Huish Gram. S., Taunton

[1]Brooks, W.P. Stationers' Co.'s S., Hornsey
Gallop, A.W. *a.* Private tuition
Gleave, P.N. University S., Southport
Kendon, D. *al.* Bethany H., Goudhurst
Salmon-Backhouse, B. Wortley de Leeds Gram. S.
Waldron, R.L. St. Augustine's Coll., Ashford
Woods, F.C. Eye Gram. S.

Bendix, F.E. Private tuition
Bridge, T. Catholic Coll. Inst., Manchester
Clarke, H.R. Derby School
Farbrother, E.S. Private tuition
Lacy, H.C. London Coll. for Choristers, Paddington
Luff, E.C.W. Montrose Coll., Streatham Hill
Moore, G.K. Private tuition
Newell, A.F. *d.* Tollington S., Muswell Hill
Rogers, G. St. Boniface's Coll., Plymouth
Tindale, J.E. Chester le Street Secondary Day S.
Williams, A.H. Municipal S. of Commerce, Manchester

Freeman, A.G. Eye Gram. S
Green, C.E. Bethany H., Goudhurst
[1]Little, P. St. Mary's Hall, Cardiff
Palmer, F.W. *al.* Private tuition

Chaplin, S.E. St. John's Coll., Brixton
Cook, G.H. Gram. S., Camelford
Dowling, A.B. *s.* Lady Hawkins' Gram. S., Kington
Fox, W. Private tuition
Green, B.J. *d.* Lancaster Coll., W. Norwood
Jordan, G. Private tuition

Allin, T.S. Private tuition
Ash, T.S. High School, Leek
Gaverick, R.H. Private tuition
Graham, C. Tynemouth School
Hewitt, H. Brunt's Technical S., Mansfield
Moss, V. Tudor Hall, Hawkurst
Parks, W.R. Municipal Secondary S., Brighton
Shefford, A.D.E. Private tuition

Dowling, H.H. Civil Service & Shorthand S., Portsmouth
Forrest, R. Royal Gram. S., Clitheroe
Gray, R. Todd's Nook Council S., Newcastle-on-T.

BOYS, 2ND CLASS, PASS—*Continued.*

Miles, L.J. St. Joseph's Coll., Dumfries
[1]Miller, T. *d.* Private tuition
Moore, W.R. Ashford Gram. S.
Paton, A. Todd's Nook Council S., Newcastle-on-T.
Pritchard, G.P. Private tuition
Woodhall, H.C. Private tuition

[1]Allcock, C.C. Private tuition
Fairbairn, W.A. *al.* Private tuition
Richards, W. The Abbey S., Penzance

Goulson, J.E. Gram. S., Eccles
Heptinstall, W.K. Tollington S., Muswell Hill, N.
Herbert, S. Bethany H., Goudhurst
Hollow, J.W. Penzance P.T. Centre
[1]Hull, J.J. Private tuition
Paul, F.G. Stationers' Co.'s S., Hornsey
Redmore, J.M. St. Winifred's S., Torquay
Samways, A.R. *al.* The Modern S., Oswestry

Long, A. Taunton's S., Southampton
Magrane, G.F. St. George's Coll., Weybridge
McCarthy, B. *al.* St. Teresa's, Birkdale, Southport
Watson, S.F. Hillmartin Coll., Busby Pl., N.W.
Whale, B.L. *d.* Polytechnic Secondary S., Regent St., W.

Durrant, L.E. Lindisfarne Coll., Westcliff-on-Sea
Percival, S.C. *d.* Private tuition
Schonemann, C.J. *d.* Barnstaple Gram. S.
Summerskill, J.H. Elmside S., Redhill

Elleray, J.P. Private tuition
Finlow, L.W. Sandbach School
Gilham, H.B. Bethany H., Goudhurst
Graver, G.F. Market Bosworth Gram. S.
Hinton, A.W. Woodstock Secondary S.
Hudson, J. Lindisfarne Coll., Westcliff-on-Sea
Kerr, J.W. St. Joseph's Coll., Dumfries
[1]Knox, J. Skerry's Coll., Newcastle-on-Tyne
Laing, A.C. *a.* Private tuition
Mills, G.O. Private tuition
Rowell, W. Gram. S., Newton Abbot
Sargeant, B.T. Raleigh Coll., Brixton
Williams, E.R. Private tuition

Baskcomb-Harrison, H.W. Private tuition
Bell, B.I. Ludlow Commercial S.
French, F.G. Holt H., Cheshunt
Hennriegel, A.M. Tudor Hall, Hawkhurst
McAnally, A. Catholic Coll. Inst., Manchester
[1]Robson, A. Private tuition
Rumsey, J.F. Montrose Coll., Streatham Hill
Tripp, J.E.H. Private tuition

Ackland, J.G. Private tuition
Hills, L.G. St. Olave's Gram. S., Tower Bridge, S.E.
Howells, J. *ma.* Porth Higher Grade S.
Hughes, R.L. Gram. & Coll. S., Carnarvon
Johnson, L.G. Lapford Coll. S.
Peck, H. Wilson Coll., Stamford Hill

Barham, H.L. Tudor Hall, Hawkhurst
Hatch, H.C. Private tuition
[1]Lamputt, H.G. Private tuition
Paul, A.N. Private tuition
Taylor, H.G. Stoke Public Higher S., Devonport
Wakefield, T.C. Gram. S., Camelford

Bainbridge, E. *a.* Private tuition
Banbury, J. *d.* Dunheved Coll., Launceston
Buer, W.B. *f.* 77 Onslow Road, Richmond
Clark, S. de N. Grove H., Highgate
Leach, S.L. Christ's Coll., Blackheath
Leman, C.M. Lindisfarne Coll., Westcliff-on-Sea
Long, F.R. Tollington Park S., N.
Seedhouse, C.N. Perse Gram. S., Cambridge
Townshend, O.B. Private tuition

Blake, H. Comm. S., High Rd., Wood Green
Buckingham, O.H. Belmont H., Walmer
[1]Hall, J.C. Stationers' Co.'s S., Hornsey
Hawson, L.D. *a.* Private tuition
Iron, D. Tudor Hall, Hawkhurst
Jessop, J. Private tuition
Roberts, F. Stoke Public Higher S., Devonport
[1]Robinson, L.G. *d.* Kilgrimol S., St. Annes-on-Sea
Rosenberg, E.S. *al.* Private tuition
Schofield, F. Longwood Gram. S., Huddersfield

Driver, N.W. Hillmartin Coll., Busby Place, N.W.
Drury, A.W. Ruthin Gram. S.
Godwin, T.E. *d.* Central H. Grade S., Shakespeare Rd., Acton
Hoskin, A. Wadham S., Liskeard
Reeve, S. Acton County S., Acton
Robertson, G.D. Charterhouse, Godalming
Somper, M. Cusack Inst., Moorfields, E.C.
Wills, C.E. Wadham S., Liskeard

Champion, N.W. Montrose Coll., Streatham Hill
Fairhead, C. Earls Colne Gram. S.
Hains, R.T. Stoke Public Higher S., Devonport
McAllister, W.J. St. Joseph's Coll., Dumfries
Roberts, J.T. Gram. and Coll. S., Carnarvon
Skentelbury, B.T. Wadham S., Liskeard
Smith, H. Private tuition
Tollemache, D.J. *f.* St. George's Coll., Weybridge
Ostler, C.G. University S., Rochester

Hindle, E. Private tuition
Quin, R. St. George's Coll., Weybridge
Thompson, J. St. Boniface's Coll., Plymouth
Timson, C.E. Private tuition

Bazalgette, S.W. Modern S., Clissold Park
Forrest, A.G. Private tuition
Langstaff, S. Todd's Nook Council S., Newcastle-on-T.
Lucas, H.J. Richmond Hill S., Richmond
Mercer, W.A. Queen Elizabeth's Gram. S., Blackburn
[1]Morgan, P.C. The Douglas S., Cheltenham
Nosworthy, J.L. Tavistock Gram. S.
[1]Walker, H.L. Private tuition

THIRD CLASS.

Honours Division.

Cabrera, A.L. *f.i.sp.* St. Aloysius' Coll., Hornsey Lane, N.
Garner, H.F. *e.gm.f.lt.* Market Bosworth Gram. S.
Maillet, J. *a.al.gm.bk.f.* St. Aloysius' Coll., Hornsey Lane, N.
Oliva, P.P. *e.a.sp.* St. Aloysius' Coll., Hornsey Lane, N.

Arguile, C. *e.d.* Market Bosworth Gram. S.
Blake, W.H. *e.a.al.d.* St. James's S., Devonport

Pearson, L.H. Market Bosworth Gram. S.
Detouche, M.B. *f.d.* St. Aloysius' Coll., Hornsey Lane, N.
Brown, E.A.L. *e.al.gm.f.* Tollington S., Muswell Hill, N.
Mares, A.R. *a.f.* Tollington S., Muswell Hill, N.

Floyd, A.G. *g.* St. James's S., Devonport
Haury, P. *e.f.ge.* Marist Brothers' Coll., Grove Ferry

Duverger, A. *e.f.* Marist Brothers' Coll., Grove Ferry
Marks, P. *a al.* Tollington S., Muswell Hill, N.
Shipton, E.A. *e.al.f.d.* Tollington S., Muswell Hill, N.
Griffe, M. *f.* Marist Brothers' Coll., Grove Ferry
Lec, L.G. *al.gm.f.* Tollington S., Muswell Hill, N.

Hammond, W.E. *g.d.* St. James's S., Devonport
Shore, W.J. *a.al.* Market Harborough Gram. S.
Verano, L. *e.a.al.sp.d.* Christian Bros.' Coll., Gibraltar

Elliott, E.A. *e.a.al.* Market Harborough Gram. S.
Guenault, A. *f.* St. Joseph's Coll., Beulah Hill
Guerin, P. *a.f.* Marist Brothers' Coll., Grove Ferry
Toussaint, C. *a.al.f.* St. Joseph's Coll., Beulah Hill

Golden, T.L. *e.f.l.* St. Joseph's Coll., Dumfries
Jenkins, W.E. *e.a.al.* Pentre Higher Elem. S., Rhondda
Sainz, L. St. Joseph's Coll., Dumfries
Holmes, J. *a.* Tollington S., Muswell Hill, N.
Stockton, H.V. *e.d.* Tollington Park S., N.

Bent, F.G. *e.h.g.* Tollington Park S., N.
Evans, B.S. *a.al.w.* Pentre Higher Elem. S., Rhondda
Herrmann, E.F.G. *e.al.f.* Montrose Coll., Streatham Hill

Cousins, F. *a.al.* Tollington Park S., N.
Haigh, N. *e.a.al.d.* Thorne Gram. S.
Peel, C.P. *f.* Gram. S., Newton Abbot

Andersch, G.O. Tollington S., Muswell Hill, N.
Edwards, C.C.R. Tollington S., Muswell Hill, N.
Millard, B.A. *e.a.al.f.* Littlestone Coll., Littlestone-on-Sea
Jesson, A.N. *a.al.d.* Market Harborough Gram. S.
Munson, T.O. *g.a.d.* Central Classes, Long Sutton

Bérard, A. *a.f.* Marist Brothers' Coll., Grove Ferry
Gore, H.J. *al.* Tollington S., Muswell Hill, N.

Behrmann, T.J. St. Aloysius' Coll., Hornsey Lane, N.
Gilman, G.E. *s.d.* West Bridgford Higher Grade Council S.
Kohnlein, C.H. *e.a.al.d.* Bethany H., Goudhurst
Stedeford, R.V. *al.d.* Bible Christian Coll., Shebbear
Taylor, E.H. *e.g.* Osborne High S., W. Hartlepool
Turner, H.D. *sc.* Huish Gram. S., Taunton

Cheney, J. *d.* Market Harborough Gram. S.
Melville, S. *a.f.* Tollington S., Muswell Hill, N.
Staniforth L. *a.* Thorne Gram. S.
Ball, A.M. *e.a.* Gram. S., Quorn

Carrasco, J. *e.a.al.* Christian Bros.' Coll., Gibraltar
Clarke, E. *a.d.* Stoke Public Higher S., Devonport

Daly, J.D. *e.al.* St. Joseph's Acad., Kennington Rd., S.E.
Homer, H.W. *a.* Lady Hawkins' Gram. S., Kington
Marsh, W. *e.h.a.* Bible Christian Coll., Shebbear
Snow, W. Bible Christian Coll., Shebbear
Sumner, W.H. *e.a.* Orient Coll., Skegness
Wheeler, P. *a.al.gm* Gram. S., Southend-on-Sea

Harlow, F.W. *e.a.* Newcastle Modern S.
Pool, F. *e.a.al.f.* Market Harborough Gram. S.
Sharples, H.G. St. Joseph's Coll., Dumfries

Edmed, W. *e.g.* Devonshire H., Orpington
Evans, W.J. *a.w.* Pentre Higher Elem. S., Rhondda
Flower, H.M. *e.f.* Richmond Hill S., Richmond
Kornweibel, A.H. *e.* St. George's Coll., Weybridge
O'Connell, D.J. *e.a.* St. Aloysius' Coll., Hornsey Lane, N.
Smith, C.A. *a.al.* Stafford Coll., Forest Hill
Stephens, H.C. *a.al.* Tollington S., Muswell Hill, N.
Walsh, A.E. *e.* Tollington S., Muswell Hill, N.

Cane, L.J. *e.* Oxford H., Junction Rd., N.
George, F.H. *bk.* St. Joseph's Coll., Dumfries
Goodwin, E.L. *e.* Gram. S., Eccles
Morival, S. St. Joseph's Coll., Dumfries
Newton, T.A. Osborne High S., W. Hartlepool
Owen, D.W. *e.a.al.d.* Pentre Higher Elem. S., Rhondda
Scott, S M. *e* Lindisfarne Coll., Westcliff-on-Sea
Williams, W.L. *e.d.* Porth Higher Grade S.

Benson, C.D. *e.f.l.* Westbourne Rd. Prep. S., Sheffield
Evans, D.J. *a.sc.* Porth Higher Grade S.
Evans, S. *e.sc.* Porth Higher Grade S.
Husband, D.I. *e.l.* St. George's Coll., Weybridge
Wainwright, W.E. *e.al.* Gram. S., Quorn

Horsley, A. Tollington S., Muswell Hill, N.
Riddelsdell, A.C. *e.al.* Tollington Park S., N.

Clark, G. *a.* Osborne High S., W. Hartlepool
Raguin, P. *f.* Marist Brothers' Coll., Grove Ferry
Swan, W. *e.a.al.* Newcastle Modern S.

Howe, R.N. Tollington S., Muswell Hill, N.
McConnell, T. *e.* St. Joseph's Coll., Dumfries
Ochoa, C. de. *f.sp.* Heaton Moor College
Ryan, T. *e.f.* Catholic Coll. Inst., Manchester

Bell, E.H. *al.* Tollington S., Muswell Hill, N.
Bunney, F. *s.d.* Gram. S., Quorn
Fourré, H. St. Joseph's Coll., Dumfries
Henderson, C.S. Tollington S., Muswell Hill, N.
Holcombe, H.J. *sc.d.* Huish Gram. S., Taunton
Phillips, J.J. *a.* Pentre Higher Elem. S., Rhondda
Potter, H.L. Tollington S., Muswell Hill, N.

Betts, S.W. Eye Gram. S.
Choyce, A.N. *e.a.* Market Bosworth Gram. S.
Connett, P.D. *h.f.* Tollington S., Muswell Hill, N.
Cox, R.I. *a.* Newcastle Modern S.
Edgar, L.V *e.* Hawkesyard Coll., Rugeley
Evans, L.S. *a.gm.* Christ Church Higher Grade S., Bootle
Hewes, T.L. *a.* Market Bosworth Gram. S.
Pryce, H. Lady Hawkins' Gram. S., Kington
Richards, E.H. *a.* Wadham S., Liskeard
Roberts, A.E. Heaton Moor College

THIRD CLASS.

Pass Division.

[2]James, H.W. *ma.* Pentre Higher Elem. S., Rhondda
[2]Hunt, R.F. *a.bk.* Richmond Hill S., Richmond
[2]Bryant, F.G. Rye Gram. S.
[2]Tanner, B. St. Aloysius' Coll., Hornsey Lane, N.
[2]Morgan, F.G. *a.d.* Lady Hawkins' Gram. S., Kington

[2]Kelley, E.W. Devonport P. T. Centre
[2]Wilson, A.L. *gm.* Argyle H., Sunderland
[2]Jefferies, H. *f.d.* Catholic Coll. Inst., Manchester
[2]Swainson, E. *s.* Ruthin Gram. S.
[2]Rimmer, C. *a.d.* University S., Southport

[2]Brassington, C. *d.* St. Philip's Gram. S., Edgbaston
[2]di Villa, J. St. Joseph's Coll., Beulah Hill

[2]Gater, C.R.C. *al.* University S., Rochester
[2]Peile, J.A. Friends' S. Wigton
[2]Hughes, T.A. Pentre Higher Elem. S., Rhondda
[2]Mosseri, J.T. *f.* Great Ealing S., Ealing
[2]Aitkens, C.A.C. Eversley S., Southwold
[2]Garriga, P. *sp.* St. Joseph's Coll., Dumfries

[2]Jones, A. Pentre Higher Elem. S., Rhondda
[2]Strachan, S.C. Montrose Coll., Streatham Hill
[2]Tolley, E.A.S. Culham College S., Abingdon
[2]Baas, R. *f.* St. Joseph's Coll., Beulah Hill

[2]Davie, J.C. The College, Weston-super-Mare
[2]White, W. *al.* Private tuition

[2]Boyce, A.F. The Philological S., Southsea
[2]Klefisch, P.J. St. Aloysius' Coll., Hornsey Lane, N.
[2]Uglow, N.C. *al.d.* Stoke Public Higher S., Devonport
[2]Wilcocks, J.M. St. Winifred's S., Torquay
[2]Dodd, L.E. Tavistock Gram. S.
[2]Smith, I. Catholic Coll. Inst., Manchester

[2]Boustred, E.S. *d.* Tollington S., Muswell Hill, N.
[2]Tolcdano, H. *f.sp.* Townley Castle S., Ramsgate
[2]Marriott, H. *bk.* Gram. S., Eccles

[2]Chipp, H.L. Lady Hawkins' Gram. S., Kington
[2]Lee, E. Taunton's S., Southampton
[2]Riley, R. Bethany H., Goudhurst

[2]Richards, L.H.P. *f.* Steyning Gram. S.
[2]Vokes, A.J. St. John's Coll., Brixton
[2]Talbot, E. Gram. S., Eccles

[2]Parker, T.W. Tollington S., Muswell Hill, N.
[2]Robson, R. Todd's Nook Council S., Newcastle-on-T.

[2]Clements, P.A. Market Bosworth Gram. S.
[2]Coon, F.A.H. Gram. S., Camelford
[2]England, B.H. Steyning Gram. S.
[2]Lloyd, P.F. *bk.* St. George's Coll., Weybridge
[2]Ossorio, F. Christian Bros.' Coll., Gibraltar

[2]Dunford, L.B. Newcastle Modern S.
[2]Neale, C.H. The Douglas S., Cheltenham

[2]Gooch, C.D. Hillmartin Coll., Busby Place, N.W.
[2]McDonnell, A.V. St. George's Coll., Weybridge

[2]Coleman, J. St. Mary's Coll., Linthorpe, Middlesbro'
[2]Snelson, F. University S., Southport

[2]Hawkins, H.W. Lady Hawkins' Gram. S., Kington
[2]Knox, C.R. Polytechnic Secondary S., Regent St., W.
[2]Rodgers, F.P. *f.* St. Joseph's Coll., Dumfries

[2]Ensum, A.G. *a.* Winchmore Hill Coll. S., N.
[2]Mackay, J. St. George's Coll., Weybridge
[2]Martin, A. *d.* Carlisle Higher Grade S.

[2]Behenna, C.P. Stoke Public Higher S., Devonport
[2]Chapman, E.J.J. Sir Andrew Judd's Comm. S., Tonbridge
[2]Noble, G.G. Dunheved Coll., Launceston

[2]Darracott, R.B. University S., Rochester
[2]Ryan, M.V. St. Joseph's Coll., Dumfries
Wallis, A. Polytechnic Secondary S., Regent St., W.
[2]Barton, J.F. Gram. S., Eccles

Betts, D.C. *sc.* Eye Gram. S.
[2]Choom Aldenham S., Elstree
Corbett, A.H. Kensey, Launceston
[2]Hussey, B. Belmont H., Walmer
Martin, W. *a.* Catholic Coll. Inst., Manchester
Stubbings, L. *s.e.f.* Bible Christian Coll., Shebbear
Williams, J. *d.* Pentre Higher Elem. S., Rhondda
[2]Worsley, A.D. Gram. S., Eccles

[2]Abrahamson, H. Tollington S., Muswell Hill, N.
[2]Dale, F.C. *d.* Private tuition
Dick, A.O. Tollington S., Muswell Hill, N.
[2]Easton, W.R. Private tuition
[2]Evans, W.N. Porth Higher Grade S.,
Folkard, S.W.P.B. *al.* Eye Gram. S.
Harvey, C.H. Stoke Public Higher S., Devonport
Hill, H. Orient Coll., Skegness
Newman, M.H. *a.* University S., Rochester
Pitaluga, T. Christian Bros.' Coll., Gibraltar
Stainthorpe, G.W.T. *d.* Battle Hill S., Hexham
Sunley, G. *al.* St. Aloysius' Coll., Hornsey Lane, N.
White, F.C. *e.al.* Gram. S., Quorn
Young, P.C. *a.gm.* Newcastle Modern S.

BOYS, 3RD CLASS, PASS—*Continued.*

²Crane, R.G. Gram. S., Belper
²Francis, P.J. Sir Andrew Judd's Comm. S., Tonbridge
Fuller, W.J. *f.* Tollington S., Muswell Hill, N.
Jones, I. *w.* Pentre Higher Elem. S., Rhondda
McAllister, J.J. *a.* St. Joseph's Coll., Dumfries
McConnachie, G.R. *a.* St. Joseph's Coll., Dumfries
Moore, A. *al.* University S., Rochester
Morrison, W.A.R. Newcastle Modern S.

Beevor, L.P. Gram. S., Belper
Bomford, A.R. Gram. S., Eccles
²Clemmens, E.W.S. Cambridge H., Camden Rd., N.
Connolly, W.P. St. Aloysius' Coll., Hornsey Lane, N.
²Donovan, J. St. Joseph's Coll., Dumfries
Edwards, H. *a.* Ruthin Gram. S.
Kirby, W.H. Tollington Park S., N.
Masson, R. *a.al.* Stoke Public Higher S., Devonport
²Pocock, N.S.D. Belton H., Broadstairs
Schoffert, A.J. *a.* Tollington Park S., N.
²Stoddart, T. Dunheved Coll., Launceston

Bell, E. *e.a.al.* Catholic Coll. Inst., Manchester
Ewen, W.P. *d.* St. Joseph's Coll., Dumfries
Marshall, G.R. Argyle H., Sunderland
McKearney, H.G. *d.* St. Joseph's Coll., Dumfries
Moore, A.S. *a.* MarketHarboroughGram.S.
Morris, G.O. Grove H., Highgate
²Reilly, T. St. Joseph's Coll., Beulah Hill
Thomas, M.L. *a.sc.* Porth Higher Grade S.
Whitehurst, C.L. Tollington S., Muswell Hill, N.

²Barker, G.T. Scorton Gram. S.
Couldrey, A.W. *d.* St. George's Coll., Weybridge
French, H.L.H. Huish Gram. S., Taunton
²Goss, J.A.H. St. Winifred's S., Torquay
Murphy, M.M. *e.* St. Joseph's Coll., Dumfries
Phillips, G.A. St. Joseph's Acad., Kennington Rd., S.E.
²Sherlock, D.F. St. Aloysius' Coll., Hornsey Lane, N.
²Smith, C. FartownGram.S., Huddersfield

Chadder, F.A. *a.* Bible Christian Coll., Shebbear
Dean, F.R. *a.* Market Bosworth Gram. S.
Duffell, H.J. St. Joseph's Coll., Dumfries
Grohmann, R.F. *al.* Tollington S., Muswell Hill, N.
²Hughes, J.O. Gram. & Coll. S., Carnarvon
Mansfield, R. *d.* St. Joseph'sColl., Dumfries
²Milman, F.J. St. Aloysius' Coll., Hornsey Lane, N.
Pape, T.C. *d.* Wadham S., Liskeard
Race, E.W. Gram. S., Eccles
Ransome, H. Gram. & Col. S., Carnarvon
Saunders, F. *sc.* Eye Gram. S.
Selby, F.P. Orient Coll., Skegness
²Sheridan, J. St. Joseph's Coll., Dumfries
Thomas, H. Porth Higher Grade S.
Walker, L.G. Culham College S., Abingdon
²Wilkie, P.W.A. Stafford Coll., Forest Hill

Archer, E H. St. Joseph's Coll., Dumfries
²Candish, E.J. St. Winifred's S., Torquay
²Edmondson, G.A. Lancaster Coll., Morecambe
Fletcher, J.T. *a.* Central Classes, Long Sutton
Garnish, R.B. *a.al.* Bible Christian Coll., Shebbear
George, J. *a.* St. Joseph's Coll., Dumfries
Hunt, A.E. Tollington Park S., N.
Lennox, J. *a.* St. Joseph's Coll., Dumfries
Ogle, G.A. *a.al.* Gram. S., Belper
Ridden, W.L. *e.* Winchmore Hill Coll. S., N.
²Spain, P.C. St. George's Coll., Weybridge
²Summers, A.J. Market Bosworth Gram. S.
Tapper, W. Pentre Higher Elem. S., Rhondda
Watkins, W.R. Pentre Higher Elem. S., Rhondda
Wigg, C. Tollington S., Muswell Hill, N.

²Armstrong, A.R. Paddington High S.
Baynham, A.W. Tynemouth School
Bundy, A. PentreHigherElem.S., Rhondda
Carrotte, F.C. Gram. S., Eccles
Clark, H.B. *al.* Tollington S., Muswell Hill, N.
Dale, A.B. St. Boniface's Coll., Plymouth
Davenport, M. Gram. S., Belper
Elliott, V.B. Westbourne Rd. Prep. S., Sheffield
Evans, E. Pentre HigherElem.S., Rhondda
Haynes, J.H. St. Aloysius' Coll., Hornsey Lane, N.
Hearder, S.F.S. *al.* Wadham S., Liskeard
Hovelaque, J. *f.* Catholic Coll. Inst., Manchester
Hurst, S.J. *bk.* St. Joseph'sColl., Dumfries
²Johnson, H. Walsall Comm. Coll.
²Leech, H. Tynemouth School
²Perry, W.J. The Douglas S., Cheltenham
Quincey, J.S. *e.d.* Market Bosworth Gram. S.
Roberts, H.O. Hillmartin Coll., Busby Place, N.W.
Robinson, S.C. *e.* Tollington Park S., N.
Snell, A. Wadham S., Liskeard
Wood, H. Hermitage S., Grimsargh

Crossley, F.S. Gram. S., Eccles
²Dunn, W.A. Belmont H., Walmer
²Hughes, A.T. Scorton Gram. S.
Kemp, T. St. Joseph's Coll., Dumfries
Mosely, M.M. Lindisfarne Coll., Westcliff-on-Sea
O'Brien, J.V. St. George'sColl., Weybridge
Rea, R.C.L. *g.* St. John's Coll., Brixton
Richards, D.G. *e.* Porth Higher Grade S.
²Wallis, H.L. St. Catherine's, Littlehampton

²Barradell, A.E. Eye Gram. S.
Braithwaite, V.E. Thorne Gram. S.
Butler, J. Salesian S., Battersea
Catchpole, H.W. Tollington Park S., N.
Evans, D.R. *w.* Pentre Higher Elem. S., Rhondda
Geach, E.C. *d.* St. Winifred's S., Torquay
²Greenop, C.D. Montrose Coll., Streatham Hill
Hudson, F. *e.* St. Joseph's Coll., Dumfries
Lloyd, B.T.G. Huntington Endowed S., Kington
Mabey, C.H.C. Littlestone Coll., Littlestone-on-Sea
Probert, G. *a.* Lady Hawkins' Gram. S., Kington
Prout, J.P. *d.* Hoe Grammar S., Plymouth
²Rush, J. Friends' S., Wigton
Smith, J.V. *gm.* Christ Church Higher Grade S., Bootle
²Sworder, W. Holt H., Cheshunt
Whitting, E.J. The College, Weston-super-Mare

Allshorn, S.G. Grove H., Highgate
Billings, P.M. Tollington Park S., N.
²Bishop, W.D. Tollington S., Muswell Hill, N.
Davies, C. Osborne High S., W. Hartlepool
Diaz, J. 'Christian Bros.' Coll., Gibraltar
Harris, T.H. *e.* Wadham S., Liskeard
Kelly, B.J. University S., Southport
²King, J. *d.* Central Hr. Grade S., Shakespeare Rd., Acton
²MacCarthy, F. St. Joseph's Coll., Beulah Hill
Mitchell, E.S. *al.mu.* Tollington S., Muswell Hill, N.
²Morley, E.B. Private tuition
Morrison, H.C. *a.* London Coll. for Choristers, Paddington
Rutter, F.J. *d.* Culham College S., Abingdon
²Shore, E. *d.* Central Hr. Grade S., Shakespeare Rd., Acton
Sutton, F.S. *a.al.* Willow House Coll., Walsall
²Wenham, F.G. Ashford Gram. S.
²Wilkie, C.A.J. Stafford Coll., Forest Hill

Batcheller, H.G. Tudor Hall, Hawkhurst
²Burns, H.S.R. Herne H., Cliftonville, Margate
Bustinza, P. St. Joseph's Coll., Dumfries
²Edwick, G.V. Bethany H., Goudhurst
²Fitzgibbons, J. St. Mary's Coll., Linthorpe, Middlesbro'
²Harries, E.H. Gram. S., Pencader
Husband, H.B. *e.l.* St. George's Coll., Weybridge
²Husband, W.M.H.G. Wadham S., Liskeard
²Hyland, C. Tudor Hall, Hawkhurst
²Jones, R.I. Ruthin Gram. S.
Kitchingman, C.L. Stafford Coll., Forest Hill
²Lawrence, I.T. Porth Higher Grade S.
²Machin, J.C. Mossley Hall S., Congleton
Morgan, B.V. Pentre Higher Elem. S., Rhondda
O'Brien, R.J. St. George's Coll., Weybridge
Wilson, A.F. St. John's Coll., Brixton

Allen, J. Culham College S., Abingdon
Carr, N. *e.* Lindisfarne Coll., Westcliff-on-Sea
Cintrat, M. Marist Brothers' Coll., Grove Ferry
Collins, J.H. Stoke Public Higher S., Devonport
²Daykin, T. Brunt's Technical S., Mansfield
Devenish, R.C. Modern S., East Grinstead
Falconbridge, H.J. West Bridgford Higher Grade Council S.
George, H.H. *d.* Porth Higher Grade S.
Jamieson, W.A. *a.d.* Ruskin S., Maidenhead
Langford, C.N. *e.a.* St. Michael's Coll., N. Kensington
Lewis, D. *a.* Gram. and Coll. S., Carnarvon
Millard, V. Littlestone Coll., Littlestone-on-Sea
Narbeth, W.A. *d.* Christ's Coll., Blackheath
Parsons, J. *e.a.* Orient Coll., Skegness
Robinson, E.T. Stoke Public Higher S., Devonport
²Roscelli, A. Christian Bros.' Coll., Gibraltar
²Swarbrick, J. Private tuition
Thackrah, A.R. *e.* Littlestone Coll., Littlestone-on-Sea
²Tilbury, R.W. The Philological S., Southsea
²Tucker, T.C. Tollington S., Muswell Hill, N.
White, E.B. *d.* St. George'sColl., Weybridge

Adams, C. Stoke Public Higher S., Devonport
Benjamin, J. Porth Higher Grade S.
Broad, T.H. *a.* Private tuition
Bryan, J.M. Lindisfarne Coll., Westcliff-on-Sea
²Casey, F.D. St. George's Coll., Weybridge
Edwards, O.J. Tollington Park S., N.
Hale, G.T. Belmont H., Walmer
Hanney, A. Pentre Higher Elem. S., Rhondda
Matthew, P.C. *e.l.* Lady Hawkins' Gram. S., Kington
Moody, L.L. *al.* Bethany H., Goudhurst
²Perham, E. Polytechnic Secondary S., Regent St., W.
Rubino, G. *al.* Salesian S., Battersea
Rush, F.H. *sc.* Eye Gram. S.
Scott, R.D. Tollington S., Muswell Hill, N.
Seward, E.J. *sc.* Huish Gram. S., Taunton
Trivett, W.T. *e.* Market Bosworth Gram S.
Walton, G.H. Battle Hill S., Hexham

Baker, F. *e.* ChristianBros.'Coll., Gibraltar
²Beak, D.M.W. Taunton'sS., Southampton
²Brooks, A.J. Bible Christian Coll., Shebbear
Crane, W.H. Gram. S., Belper
²Golland, E. Gram. S., Eccles
Hobson, C.W. *d.* Orient Coll., Skegness
²Honour, F.L. Tollington S., Muswell Hill, N.
²Jeukins, J.A. Endcliffe Coll., Sheffield
Lewis, A.W. *al.* Stoke Public Higher S., Devonport
²Morgan, J.J. St. Joseph's Coll., Dumfries
²Pain, F. Belmont H., Walmer
Weatherhogg, W. *d.* Central Classes, Long Sutton

Barnes, J.McA. Modern S., East Grinstead
Bullick, E. *h.* UlsterProvincial S., Lisburn
Burnett, G.R. *a.* St. Joseph's Coll., Dumfries
Emmerson, F. *a.* Argyle H., Sunderland
Gibson, A.J. *a.* University S., Rochester
Gray, G.E. St. George's Coll., Weybridge
²Heirons, W.T. Winchmore Hill Coll. S., N.
Hodge, L.B. Tollington S., Muswell Hill
²Knight, S.P. Bible Christian Coll., Shebbear
²Mascall, W.J. St. Aloysius' Coll., Hornsey Lane, N.
Moor, J. University S., Southport
²Price, A.R. Lady Hawkins' Gram. S., Kington
Schofield, T. St. Joseph's Coll., Dumfries
Stedeford, N.C. Bible Christian Coll., Shebbear
Taylor, M.S.J. CulhamCollegeS., Abingdon
Tonkin, R.B. *d.* Kent House Coll., Anerley
Williams, J.L. St. Joseph's Coll., Dumfries

Bowes, T. Carlisle Higher Grade S.
²Brooks, L. Private tuition
Broomfield, A.W. *al.* Stoke Public Higher S., Devonport
Burnham, G.F. *e.* Rye Gram. S.
Clarkson, W.J. *d.* St. Philip's Gram. S., Edgbaston
Caunt, C. *a.* Lady Hawkins' Gram. S., Kington
²Crossley, W.R. Fartown Gram. S., Huddersfield
Evans, E.J. *a.al.* Porth Higher Grade S.
Fawkner, F. University S., Southport
Johnson, J.S. Stafford Coll., Forest Hill
²Patterson, N. Todd's Nook Council S., Newcastle-on-T.
Redford, S.A. Grove H., Highgate
Rose, J.F. Eye Gram. S.
Sharp, J.W. CatholicColl. Inst., Manchester
Simpson, R.W. Tollington S., Muswell Hill, N.
Woodhouse, M. Thorne Gram. S.

²Batcheller, R.A. *d.* TudorHall, Hawkhurst
Bell, E.S. *a.* St. Joseph's Acad., KenningtonRd., S.E.
²Carvalho, R.J. St. George's Coll., Weybridge
Ceiley, L.R. TollingtonS., MuswellHill, N.
Eva, F.T. Stoke Public Higher S., Devonport
Hanson, G.T. *e.* Central Hr. Grade S., Shakespeare Rd., Acton
Hobbs, T.H.C. *s.e.* Market Harborough Gram. S.
Jackson, B.W. Walsall Comm. Coll.
Johnson, W. Newcastle Modern S.
Lyons, M. Raleigh Coll., Brixton
McDonnell, J. St. Boniface's Coll., Plymouth
²McEnerney, W.J. St. Joseph's Coll., Dumfries
Mitchell, J. St. Joseph's Coll., Dumfries
²Nicholas, R.E. Holt H., Cheshunt
²Preston, J. Friends' S., Wigton
Reeve, D.T. *a.* MarketHarboroughGram.S
Roach, C.H. Stoke Public Higher S., Devonport
Savage, F.C. MontroseColl., StreathamHill
Swan, J.C.K. *s.e.* Montrose Coll., Streatham Hill
Thomas, D.M. *al.* Porth Higher Grade S.
Williams, G.C. *e.* Barry County S.
Wills, J.L. *a.* Gram. S., Newton Abbot

Bell-Bonnett, V.W.A. *e.* Tollington S., Muswell Hill, N.
Capper, T.J. St. Aloysius' Coll., Hornsey Lane, N.
Chamberlain, J.W.W. Kent House Coll., Anerley
Crisford, R.T. *a.* Rye Gram. S.
Egerton, F.L. Oxford H., Junction Rd., N.
Francis, F.S. Rye Gram. S.
Glover-Clark, A. Bethany H., Goudhurst
Hookham, W.A. Tollington S., Muswell Hill, N.
Hopkins, C.C. Gram. S., Dawlish
Kilkenny, G.J. St. Aloysius' Coll., Hornsey Lane, N.
Lack, E.E. Grove H., Highgate
Llewelyn, T.J. *d.* Pentre Higher Elem. S., Rhondda
McLaughlin, G.C. St. Aloysius' Coll., Hornsey Lane, N.
Newbold, P.A. *s.* St. George's Coll., Weybridge
Nicholson, G. Argyle H., Sunderland
O'Carroll, M. St. Joseph's Coll., Dumfries
Oxby, F.H. Tollington Park S., N.
²Poulton, A.C. WilsonColl., Stamford Hill
Rankin, J. St. Mary's Hall, Cardiff
Smith, H.R. Sutton Park S., Sutton
Woodburn, W.S. York Manor S., York

²Collacott, H.V. Tavistock Gram. S.
²Freshney, F. The Haughton S., York
Hartnell, H.G. Huish Gram. S., Taunton
Hewlett, C.M. *a.* Westbourne Rd. Prep. S., Sheffield
Hitchcock, P. *a.* Huish Gram. S., Taunton
Hope, J. Gram. S., Eccles
Jackman, W.H. *al.* Stoke Public Higher S., Devonport
Loetscher, F.A. St. Aloysius' Coll., Hornsey Lane, N.
Ritchie, H. Newcastle Modern S.
Speakman, E.V. *s.* Ruthin Gram. S.
Taunt, M.T. St. John's Coll., Brixton
Turner, H. *s.* Stafford Coll., Forest Hill
Unthank, G.D. Tollington S., Muswell Hill, N.
Warner, E.B. Gram. S., Eccles
Weakley, J.F. Lindisfarne Coll., Westcliff-on-Sea

Allan, P. St. Joseph's Coll., Dumfries
Beardsmore, C.J. West Bridgford Higher Grade Council S.
Bumpus, H. Gram. S., Southend-on-Sea
Burn, E.W. *e.f.* Victoria S., Heaton
Clothier, R.H.S. Bible Christian Coll., Shebbear
Edwards, R.R.P. Ruthin Gram. S.
Hall, J.H. Osborne High S., W. Hartlepool
King, E.R. *a.al.* TollingtonS., Muswell Hill
McAdam, J. Christ Church Higher Grade S., Bootle
Sparrowe, V.E. St. Winifred's S., Torquay
Warwick, S. Carlisle Higher Grade S.
Wilkes, M.W.J. Tollington S., Muswell Hill, N.

Bellotti, A. Christian Bros.'Coll., Gibraltar
Bennett, W.L. 57 Lansdowne St., Hove
Davidson, R.C. Tynemouth School
²Dent, A.E. York Manor S., York
Dowding, C.A.L. *e.* The College, Weston-super-Mare
Golds, I.T. Steyning Gram. S.
Jackson, C.F. Tollington S., Muswell Hill, N.
²Lindeman, E.H. Beverley S., Barnes
²Platt, L. Tollington S., Muswell Hill, N.
²Reilly, L. St. Joseph's Coll., Beulah Hill
Robinson, J.W. Battle Hill S., Hexham
²Rowe, A.H. Clapham Gram. S.
²Screech, F.B. Stoke Public Higher S., Devonport
Webber, A.E. Bible Christian Coll., Shebbear

Ablett, T. Porth Higher Grade S.
Clayton, F. TollingtonS., MuswellHill, N.
Ferguson, G.C. Newcastle Modern S.
Harding, D.S. CulhamCollegeS., Abingdon
Hardy, C.H. Stoke Public Higher S., Devonport

BOYS, 3RD CLASS, PASS—*Continued.*

Sullivan, J.B. St. Joseph's Coll., Dumfries
Thomas, G.V. University S., Rochester
Wainwright, A. Gram. S., Eccles
Watts, A.E. Tollington Park S., N.
Wetherall, G.P.C. St. Catherine's, Littlehampton

Baker, H. Modern S., East Grinstead
Balls, F.W. Eastward Ho! Coll., Felixstowe
Boger, H. *sp.* St. Joseph's Coll., Bculah Hill
Day, G.K. Argyle H., Sunderland
Imossi, L. Christian Bros.' Coll., Gibraltar
Ireland, D. St. Mary's Hall, Cardiff
Jacob, C.H. St. Michael's Coll., N. Kensington
²Kirwan, D. St. Mary's Coll., Linthorpe, Middlesbro'
²McDonnell, J. St. George's Coll., Weybridge
More, W.M. Winchmore Hill Coll. S., N.
²Norris, A.T. Wilton Grove S., Taunton
²Rigby, C. Revoe Council S., Blackpool
Sloggett, R.E. Stoke Public Higher S., Devonport
Tonkin, P.E. Kent House Coll., Anerley

Baker, R.J. University S., Southport
Barnes, G.W. *e.* Eudcliffe Coll., Sheffield
Beaton, P.F. *e.* Winchmore Hill Coll. S., N.
²Berry, P. The Douglas S., Cheltenham
²Collen, F.D. Christ's Coll., Blackheath
Drury, A.L. Central Hr. Grade S., Shakespeare Rd., Acton
Forster, N. Thorne Gram. S.
McButler, G.McA. *al.* Tollington Park S., N.
Power, B.F. *d.* St. George's Coll., Weybridge
Rolls, E.L. Elmside S., Redhill
²Schwabe, S.P. Tudor Hall, Hawkhurst
Sutcliffe, S.H. Tollington S., Muswell Hill, N.
Townsend, T. Holmsdale H., Worthing
Watson, W.J. Catholic Coll. Inst., Manchester
Wilson, A.F. *e.* Newcastle Modern S.
Worrall, J.B. Cambridge H., Camden Rd., N.

²Ambler, N.P. Montrose Coll., Streatham Hill
Davies, J. *a.* Catholic Coll. Inst., Manchester
Durrant, C.B. Uuiversity S., Rochester
Ford, V.E. Gram. S., Belper
Forshaw, G.B. *d.* St. George's Coll., Weybridge
Goring, A.F. University S., Rochester
Heads, A. *e.* Tynemouth School
Hemming, E.G. Culham College S., Abingdon
Higlett, A.S. Grenville S., Guildford
Jacobs, F.A.H. Colebrook H., Bognor
²Miller, A. Rise S., Sanningdale
²Poole, E.G. St. John's Coll., Brixton
²Stephens, H. Brondesbury College, N.W.
Tolley, C.E. The College, Weston-super-Mare
Williams, H.V. *a.* Corner H., Godstone
Williams, W.R.B. Bible Christian Coll, Shebbear

Ashbrook, H.R. Gram. S., Eccles
Baguley, W. Heaton Moor College
Brockbank, A. Gram. S., Eccles
²Brown, E.S. Private tuition
Caley, P.R. Beverley S., Barnes
Churchill, G.H. Norman H., W. Didsbury
Corcoran, J. St. Joseph's Coll., Dumfries
Edwards, T.C. Ruthin Gram. S.
Evans, D. University S., Southport
Gould, D.J. Huish Gram. S., Taunton
Kilroe, F. St. Joseph's Coll., Dumfrics
Middleton, R.J. Huish Gram. S., Taunton
Oriel, R.J. Porth Higher Grade S.
Stephenson, H. Osborne High S., W. Hartlepool
Sumners, S. Market Bosworth Gram. S.
²Thorn, E.P. St. George's Coll., Weybridge
Toole, F.J. St. Aloysius' Coll., Hornsey Lane, N.
Westcombe, W.R. University S., Rochester

Baulkwill, J.O. *d.* Bible Christian Coll., Shebbear
Boyer, G.W.B. Orient Coll., Skegness
Cashin, F.W. St. Boniface's Coll., Plymouth
²Hawkins, L.J. Comm. S., High Rd., Wood Green
Howes, A. Tollington Park S., N.
²Leather, J. St. Teresa's, Birkdale, Southport
Masterson, W. *a.* Catholic Coll. Inst., Manchester

Bagnall, B. *a.* Thorne Gram. S.
Bartlett, G.B. *e.* Winchmore Hill Coll. S., N.
Clough, A. St. Joseph's Coll., Dumfries
Donaldson, R.T. Carlisle Higher Grade S.
Evans, A.G. Ruthin Gram. S.
Haughton, A.L. *s.* Gram. S., Camelford

Iron, F.J. *d.* Tudor Hall, Hawkhurst
²Joy, J.C. Bethany H., Goudhurst
Livingston, R. Colebrook H., Bognor
Poppleton, H.K. Gram. S., Eccles
Reynolds, C.E. Catford Coll. S., Lewisham
Shillaker, E.J.C.G.P.H. Central Hr. Grade S., Shakespeare Rd., Acton
Smith, S.T. Market Bosworth Gram. S.
²Tomlinson, A. Fartown Gram. S., Huddersfield
Wilkes, S.E. Priory College, Hornsey

Badcock, R.C. Stoke Public Higher S., Devonport
Baines, L. St. Joseph's Coll., Dumfries
Ellwood, J. St. Joseph's Coll., Dumfries
Fowler, H. Christ Church Higher Grade S., Southport
Grundy, W.H. Stoke Public Higher S., Devonport
Lacey, F.J.H. *d.* Culham College S., Abingdon
Nelson, H. *a.* St. Joseph's Coll., Dumfries
Rant, W.E. Culham College S., Abingdon
Rust, E. Scorton Gram. S.

Brown, A. The College, Weston-super-Mare
Cook, F. St. Mary's Hall, Cardiff
Douglas, W.F. Ulster Provincial S., Lisburn
Farmer, W.H. St. Aloysius' Coll., Hornsey Lane, N.
Glendinning, J. St. Joseph's Coll., Dumfries
Goodall, H. *e.* Newcastle Modern S.
Haynes, J. *sp.* Christian Bros.' Coll., Gibraltar
Hunt, A.J. The College, Weston-super-Mare
Jones, L.T. Tollington S., Muswell Hill
Marchanton, A.L. *a.* Private tuition
Pitt, A. Southampton Boys' Coll. & High S.
Roberts, V.A. Ruthin Gram. S.
Rowe, F.P. *a.* St. Boniface's Coll., Plymouth
²Savill, A.G. Private tuiition
Walkey, F.J. Stoke Public Higher S., Devonport
Wallis, A.B. Tynemouth School
Way, A.T. London Coll. for Choristers, Paddington

Black, T. St. Joseph's College, Dumfries
Bradley, R.E. St. Aloysius' Coll., Hornsey Lane, N.
Challice, R.J. Bible Christian Coll., Shebbear
Court, J. Christ Church Higher Grade S., Bootle
Davies, G. *bk.* St. Joseph's Coll., Dumfries
Denyer, H.A.G. Sutton Park S., Sutton
Green, R.C. Hoe Gram. S., Plymouth
Hawking, F. Stoke Public Higher S., Devonport
Hutchins, S.W. Oxford H., Junction Rd., N.
Loosemore, G.H. Huish Gram. S., Taunton
McOwan, A. Corner H., Godstone
Ryan, J.A. Lindisfarne Coll., Westcliff-on-Sea
Smith, F.H. Lindisfarne Coll., Westcliff-on-Sea
²Stephenson, T. Thorne Gram. S.
Stone, H.W. Huish Gram. S., Taunton
Walenn, L.G.P. Lindisfarne Coll., Westcliff-on-Sea
²Walker, M. Friends' S., Wigton

Amon, P.H.C St. John's Coll., Brixton
Bellis, J. Middle Class S., Stalybridge
Betteridge, J.H. Warner's Coll., Richmond
Dawson, R. Bethany H., Goudhurst
Eden, J.R. *a.* St. Boniface's Coll., Plymouth
Eldridge, R.G. Lindisfarne Coll., Westcliff-on-Sea
Gilfillan, N. Tollington S., Muswell Hill, N.
Graver, R.H. Market Bosworth Gram. S.
Hall, A.E. Belton H., Broadstairs
Hamelin, P. *f.* St. Joseph's Coll., Beulah Hill
Harriss, A.K. Central Hr. Grade S., Shakespeare Rd., Acton
Henderson, R.G. Holt H., Cheshunt
Leach, J. Hawkesyard Coll., Rugeley
Michell, E.V. St. Boniface's Coll., Plymouth
Newton, C. Gram. S., Eccles
²Ney, F.A. Private tuition
Nugent, F.J. St. Joseph's Coll., Dumfries
Pickrell, L.A. St. John's Choir S., St. Leonards-on-Sea
Pope, A.J. Bible Christian Coll., Shebbear
Simmons, A.T. Hoe Grammar S., Plymouth
Thomas, E.L.P. Lindisfarne Coll., Westcliff-on-Sea
Tigue, C. St. Joseph's Coll., Beulah Hill
Walker, A.E. Market Bosworth Gram. S.
Watson, H.L. Bethany H., Goudhurst
Yelland, F.W. Gram. S., Dawlish

Brighton, F.C. The College, Weston-super-Mare
Broad, P.D.S. Private tuition
Coninck, H. St. Joseph's Coll., Beulah Hill
Dickson, H. *d.* Ulster Provincial S., Lisburn
Edwards, G. Porth Higher Grade S.
Ely, T. Vale Coll., Ramsgate

Ewen, A. St. Joseph's Coll., Dumfries
Lawlor, D. St. Aloysius' Coll., Hornsey Lane, N.
Lorimer, J.D. Eastward Ho! Coll., Felixstowe
²McFarlane, P.S. Holt H., Cheshunt
Sheridan, R. Salesian S. Battersea
Steele, H.G. Battle Hill S., Hexham
Tuttle, T. Catholic Coll. Inst., Manchester
Vincent-Brown, C. St. George's Coll., Weybridge
Welton, J.R. Lindisfarne Coll., Westcliff-on-Sea

Edwards, H.C.R. Eversley S., Southwold
Gough, E.A. Summerleaze Coll. S., E. Harptree
Ireland, L.H. St. Winifred's S., Torquay
Johnson, C.S. Stafford Coll., Forest Hill
Protheroe, H.T. Pentre Higher Elem. S., Rhondda
Roberts, O.C. The Modern S., Oswestry
Steel, D.D.P. Tollington Park S., N.
Wood, A.V. *a.* Elmside S., Redhill

Adolph, C.H.R. Sutton Park S., Sutton
Baker, J. St. Aloysius' Coll., Hornsey Lane, N.
Burke, H.J. *d.* The Douglas S., Cheltenham
Crocker, W.A. St. Michael's Coll., N. Kensington
Edwards, N.M. Ruthin Gram S.
Elliott, C.A.B. Eversley S., Southwold
Gordon, G. Tollington S., Muswell Hill, N.
Koenen, F. *d.* Catholic Coll. Inst., Manchester
May, W.E. Carlisle Higher Grade S.
McEwan, F.J. Gram. S., Highworth
Pantling, E. *e.* Private tuition
²Sheat, R.E.J.E. Lady Hawkius' Gram. S., Kington
Shrimpton, G.V. The College, Weston-super-Mare

Bell, J.S. Tynemouth School
Bew, W.H. Scorton Gram. S.
Coombs, J.R. *e.* Middle Class S., Stalybridge
Croft, W.L. Private tuition
Defer, G.E. Hillmartin Coll., Busby Place, N.W.
Dunford, E.T. Newcastle Modern S.
Gildea, C. St. Joseph's Coll., Dumfries
Hall, A.P. Bible Christian Coll., Shebbear
Harris, R.O. Argyle H., Sunderland
Jones, J.L. Ruthin Gram. S.
²Murray, T.P. St. Joseph's Coll., Beulah Hill
Spiller, G.C. Bethany H., Goudhurst
Sprinz, W.P.H. Cambridge H., Camden Rd., N.

Bird, R.J. Thorne Gram S.
²Biscombe, W. Highfield, Chertsey
Butler, A.H. Orient Coll., Skegness
Comberbach, E.S. Littlestone Coll., Littlestone-on-Sea
Holbrook, H.F.G. Elgin H., Goldhawk Rd., W.
Martin, H.J. Stoke Public Higher S., Devonport
Pearce, S. Gram. S., Camelford
Pledge, D.E. St. Winifred's S., Torquay
Scott, C.E. Steyning Gram. S.
²Swain, E.O. Mile-end House, Portsmouth

²Beare, B.A. Gram. S., Newton Abbot
Bell, E. Ruthin Gram. S.
Bradshaw, J. Stoke Public Higher S., Devonport
Coghlan, J.F. St. George's Coll., Weybridge
Fitz-Patrick, F.E. *a.* Catholic Coll. Inst., Manchester
Gasson, J.S. Rye Gram. S.
Phillips, L. St. Mary's Hall, Cardiff
Plowman, L.W. London Coll. for Choristers, Paddington
Quillinan, M. Wallsall Comm. Coll.
Robson, S.C. Hermitage S., Grimsargh
Teague S.W. Bethany H., Goudhurst
Vizard, H.D. Bethany H., Goudhurst
Wallace, W. Newcastle Modern S.
Walton, O.T. Scorton Gram. S.

Branson, N.L. Tollington S., Muswell Hill, N.
Caldwell, L.M. Bethany H., Goudhurst
Chapman, C. St. Joseph's Coll., Beulah Hill
Coleman, J. St. Boniface's Coll., Plymouth
Crispin, W.R.L. Central Hr. Grade S., Shakespeare Rd., Acton
Flint, L.E. Gram. S., Belper
Grace, I. St. Joseph's Coll., Dumfries
Holton, G.J.P. Tollington S., Muswell Hill, N.
Hurrell, H. Huish Gram. S., Taunton
Pemberton, G.G. Ruthin Gram. S.
Seers, A.L. Rye Gram. S.

Brass, D.J. Bethany H., Goudhurst
Cunningham, W.A. Fairlawn S., Leytonstone

Dyer, W.E. *a.* Private tuition
Geissinger, G. Granville Coll., Southampton
Graham, F.B. Culham College S., Abingdon
Hall, P. St. Mary's Hall, Cardiff
Kirkman, R.T. Market Bosworth Gram. S.
Konrath, G.L. St. Joseph's Acad., Kennington Rd., S.E.
Lister, H. Arnold H., South Shore, Blackpool
Pinney, R. Warner's Coll., Richmond
Smedley, H.E. Gram. S., Belper
Watson, J.O. Endcliffe Coll., Sheffield

Bolas, S. *d.* Gram. S., Eccles
Burini, A.E. Scorton Gram. S.
Callaghan, C.S. Catholic Coll. Inst., Manchester
²Davies, L.T. Gram. S., Pencader
Doyle, H.J. St. Joseph's Coll., Dumfries
²Knighton, H. Revoe Council S., Blackpool
Power, L.A. St. George's Coll., Weybridge
Robinson, G.C. Scorton Gram. S.
Scullard, G. Christian Bros.' Coll., Gibraltar
Tozer, S.H. Stoke Public Higher S., Devonport

Barber, E.C. Huish Gram. S., Taunton
Blankensee, G.E. St. Michael's Coll., N. Kensington
Buckner, J. St. Mary's Hall, Cardiff
Haynes, J.F. Gram. S., Belper
²Jenkins, R.E. Wynport House, Brighton
Luff, C.M.W. *s.* Montrose Coll., Streatham Hill
Munn, C. St. George's Coll., Weybridge
O'Keefe, P. Porth Higher Grade S.
Oxley, R.S. Margate College
Roderick, M. Porth Higher Grade S.
Shaw, L.H. Park S., Wood Green

Boyce, S.B. Rye Gram. S.
Cawson, L.D. Kent House Coll., Anerley
Corey, V. Bethany H., Goudhurst
Jack, H.C. Gram. S., Taplow
Knight, V.A.R. Alton H., Blackheath

Alabaster, W.E. Cleave's S., Yalding
Bibby, H. Tollington S., Muswell Hill, N.
Darby, S.C. Paddington High S.
Freeman-Kelly, F. Catholic Coll. Inst., Manchester
Griffiths, H.J. Bethany H., Goudhurst
Howes, J.H. Margate College
Rattee, W. Eastward Ho! Coll., Felixstowe
Webb, V. St. Joseph's Coll., Beulah Hill
Woodhouse, A. Gram. S., Eccles

²Atkinson, H. Scorton Gram. S.
Dillon, F.J.B. St. Philip's Gram. S., Edgbaston
Fewing, H. St. Boniface's Coll., Plymouth
Goozee, G.R. Bethany H., Goudhurst
Hall, H.J. Lady Hawkins' Gram. S., Kington
Jones, W.E. Ruthin Gram. S.
²Langford, J.A. Lancaster Coll., W. Norwood
Maxfield, W.R. Heaton Moor College
Perrott, C.J. Bethany H., Goudhurst
²Turner, F.C. Wadham S., Liskeard
Webber, J.S. Huish Gram. S., Taunton

Bennett, E. Christ's Coll., Blackheath
Bowden, R. Stoke Public High S., Devonport
De Witt, A.J. High S., Upper Hornsey Rise, N.
Evans, F.G. Ruthin Gram. S.
Hollands, R.T. Bethany H., Goudhurst
Phippard, D.W. Christ's Coll., Blackheath
Requejo, J.J.M. The Douglas S., Cheltenham
Rose, F.O. Fairlawn S., Leytonstone

Armitage, H.M. St. Michael's Coll., N. Kensington
Ellis, R.W. Huish Gram. S., Taunton
Hughes, W.P. Ruthin Gram. S.
Jones, T. Porth Higher Grade S.
Mudge, W. St. Boniface's Coll., Plymouth
Reynolds, D. Highfield, Wandsworth Common
Rodber, A.B. Scorton Gram. S.
²Simpson, S. Scorton Gram. S.
Smith, C. Christ Church Higher Grade S., Bootle
Stower, C. Kingsholme S., Weston-super-Mare
Tipton, W.T. Lady Hawkins' Gram. S., Kington
Yates, R. Thorne Gram. S.

Bates, C. Walsall Comm. Coll.
Colona, E. Gram. S., Taplow
Heslop, H. Friends' S., Wigton
Rosinski, A.J. Salesian Day S., Wandsworth Common
Walker, H. St. Teresa's, Birkdale, Southport

CLASS LIST—GIRLS.

(*For list of abbreviations, see page* 360.)

FIRST CLASS [or Senior].
Honours Division.

Green, G.M. *s.e.h.g.ms.f.* Devonport P.T. Centre
Austin, O. *s.h.g.ms.* Devonport P.T. Centre
Hardman, A. *f.ch.d.* Private tuition

FIRST CLASS [or SENIOR].
Pass Division.

Davey, M. *s.* Devonport P.T. Centre
Davis, F.M. The College, Goudhurst
Richley, M. *d.* St. Mary's Conv., Newlands, Middlesbro'
Reardon, A. *s.* St. Mary's Conv., Newlands, Middlesbro'
Allen, B.F. Melbourne Coll., Thornton Heath
Round, A.S. *s.d.* Brierley Hill P.T. Centre
Young, K. Gordonville Ladies' S., Coleraine
Gibson, E.A. *s.* Friends' S., Mountmellick
Brown, O. *d.* Priory S., Earls Colne
Weale, N. *d.* English High S., Pera, Constantinople
Swallow, H. Girls' Gram. S., Levenshulme
Crawshaw, M. *s.g.* Private tuition
Moult, W. Brunt's Technical S., Mansfield
Warner, W.M. Brunt's Technical S., Mansfield
Jones, K.A. Boughrood H., Brecon
Keun, W. English High S., Pera, Constantinople
Parseghian, M. *f.* English High S., Pera, Constantinople
Pack, B.M. Ashley High S., Long Sutton
Brackett, M. *f.* The College, Goudhurst
Lander, D. English High S., Pera, Constantinople
Disney, H.M. Gram. S., Quorn
Grose, O.I. *f.* St. Winifred's S., Torquay
Stapleton, E. *s.* Private tuition
Reardon, M.T. St. Mary's Conv., Newlands, Middlesbro'
Cuthbert, M.E. *s.f.* Private tuition
Tew, E.I. *d.* Hill Croft S., Wellingborough
Miles, H.M. Lynton H., Portsmouth
Richards, L.H. Private tuition

SECOND CLASS [or JUNIOR].
Honours Division.

Pears, H.G. *e.a.al.gm.f.lt.* Devonport P.T. Centre
Heathcote, H. *s.a.al.f.ch.d.* Hindley & Abram Gram. S., Hindley
Edmonds, O.N. *a.al.* Devonport P.T. Centre
Syner, W. *lt.d.* Devonport P.T. Centre
Kent, W. *e.g.d.* Devonport P.T. Centre
Whyte, K. *a.gm.lt.d.* Devonport P.T. Centre
Gay, W.E. *gm.d.* Devonport P.T. Centre
Smith, E.A. *a.al.f.* Hindley & Abram Gram. S., Hindley
Evans, E. *h.w.ch.* Pentre Higher Elem. S., Rhondda
Haddy, K.M. *a.al.gm.* Devonport P.T. Centre
Pearson, M.H., *a.al.* Market Bosworth Gram. S.
Morris, S.E. *al.f.* High School, Leek
Pettifor, B. Merthyr Tydfil Advanced Elem. Girls' S.
Clough, H. *s.al.f.* Convent F.C.J., Birkenhead
Hooper, O.M. *d.* Merthyr Tydfil Advanced Elem. Girls' S.
Mellor, K.H. *e.f.* Friends' S., Wigton
Moore, A.L. *d.* Devonport P.T. Centre
Williams, M.A. *h.* Merthyr Tydfil Advanced Elem. Girls' S.
Bennett, M. *d.* Devonport P.T. Centre
McOnic, A. *a.al.* Northern Polytechnic Day S., N.
Fry, J. *h.a.al.* Northern Polytechnic Day S., N.
Hamson, M. *al.f.d.* English High S., Pera, Constantinople
Toft, O.E. *al.d.* Devonport P.T. Centre
Alpe, E.F. *al.* Northern Polytechnic Day S., N.
Neate, P. *al.gm.ch.* Ferndale Secondary S., Rhondda
Irwin, C.M. *al.* Friends' S., Wigton
Uren, B.L. *a.al.gm.d.* Devonport P.T. Centre
Bailey, M.M. *al.d.* Gram. S., Quorn
Corder, E.M. *a.al.gm.* Northern Polytechnic Day S., N.
Ferrary, L. *f.sp.mu.* Loreto Conv., Europa, Gibraltar
Palmer, L.E.C. *d.* Devonport P.T. Centre
Weiss, E. *h.ge.phys.* Skinners' Co.'s S. for Girls, N.
Hocart, A.L. *s.g.a.f.* Cornwallis High S., Hastings
Selley, L.S. *h.* Devonport P.T. Centre
Bawden, E.S. Devonport P.T. Centre
Mizen, E.L. *al.f.* Northern Polytechnic Day S., N.
Andreae, M. *d.* St. Mary's Convent, Bruff
Jones, J. *al.* Pentre Higher Elem. S., Rhondda
Glockler, J. *s.f.* Church of Scotland Girls' S., Beirut
Smith, R. *al.* Northern Polytechnic Day S., N.
Jones, L.M. *al.d.* Ferndale Secondary S., Rhondda
Jones S. Pentre Higher Elem. S., Rhondda
Stone, F.L. *d.* Private tuition
Trewecks, M.L. Devonport P.T. Centre
Hughes, A. *d.* Merthyr Tydfil Advanced Elem. Girls' S.
Mitchell, H.M. *ch.* Devonport P.T. Centre
West, L. *a.d.* Notre Dame Coll. S., Leeds
Collins, E.S. *g.lt.* Devonport P.T. Centre
Bache, E.E.M. *d.* Skinners' Co.'s S. for Girls, N.
Hortop, A.M. *ch.* Devonport P.T. Centre
Stubbs, E. *d.* Brunt's Technical S., Mansfield
Bell, C. Merthyr Tydfil Advanced Elem. Girls' S.
Pickering, M. *d.* Friends' S., Wigton
Hosking, H.E. Devonport P. T. Centre
Jenkins, G. Stalybridge Technical Day S.
Kimpton, E. *a.al.* Northern Polytechnic Day S., N.
Lees, G.M. Girls' Secondary S., Southsea
Badminton, A. *a.al.* Brunt's Technical S., Mansfield
Beck, A.C. *ch.* Devonport P.T. Centre
Dilling, M. Pentre Higher Elem. S., Rhondda
Griffiths, B. *d.* Pentre Higher Elem. S., Rhondda
Snell, M.G. *s.* St. Winifred's High S. for Girls, S'hampton
Darton, B.M. Devonport P.T. Centre
Evans, M.E. Pentre Higher Elem. S., Rhondda
Macdonald, S.E. *d.* Carlisle Higher Grade S.
Plowman, D.P. *d.* Hill Croft S., Wellingborough
Stevens, M. Brunt's Technical S., Mansfield
Chambers, D.M. Skinners' Co.'s S. for Girls, N.
Lewis, S. Pentre Higher Elem. S., Rhondda
Simmons, M.M. Skinners' Co.'s S. for Girls, N.
Butterworth, L. *a.al f.* Rivington & Blackrod Gram. S., nr. Horwich
Finnerty, A. *f.* Notre Dame Coll. S., Leeds
Morgan, E.M. *ma.* Porth Higher Grade S.
Bayley, E. Devonport P.T. Centre
Parker, M. *f.* Gordon Sq. S. for Girls, W.C
Sharp, D.I. *a.al f.d.* County S., Westbury
Taylor, E.M. *d.* Skinners' Co.'s S. for Girls, N.
Churcher, S.V.M. *d.* Municipal Technical Inst., Portsmouth
Galbraith, L. *d.do.* Victoria Coll., Belfast
Hayes, C. Northern Polytechnic Day S., N.
Davidson, E.M. *d.* Girls' Secondary S., Southsea
Nicholls, M.J. Merthyr Tydfil Advanced Elem. Girls' S.
Radnege, B.E. *d.* Merthyr Tydfil Advanced Elem. Girls' S.
Taylor, F. *f.* Girls' Secondary S., Southsea
Thomas, M.M. *al.* Ferndale Secondary S., Rhondda
Williams, C. *h.* Gram. & Coll. S., Carnarvon
Birch, B.A. Langley H., Ashbourne
Gilburt, L.M. Skinners' Co.'s S. for Girls, N.
Derry, G.E. *d.* Merthyr Tydfil Advanced Elem. Girls' S.
Hammond, E. High School, Leek
Masters, A. *d.* Pentre Higher Elem. S., Rhondda
Brailli, S. *f.d.* St. Ursula's S., Westbury-on-Trym
Quinn, E. *a.* St. Mary's Conv., Newlands, Middlesbro'
Spratt, N.O. *f.* Girls' Secondary S., Southsea
Walker, E.M. *al.* Girls' Secondary S., Southsea
Goodman, L. *d.* Girls' Secondary S., Southsea

SECOND CLASS [or JUNIOR].
Pass Division.

[1]Le May, C.E. *d.* St. John's H., Felixstowe
Moody, E. Brunt's Technical S., Mansfield
Wooley, M.M. Girls' Secondary S., Southsea
Hutchinson, A. Brunt's Technical S., Mansfield
Jenkins, S.J. Merthyr Tydfil Advanced Elem. Girls' S.
Lawson, M.E. *d.* Carlisle Higher Grade S.
Leith, E.J. *al.d.* Skinners' Co.'s S. for Girls, N.
Graee, E.M. *s.d.* The College, Gondhurst
McNulty, K. Notre Dame Coll. S., Leeds
Scott, D.G. *al.* County S., Westbury
Griffiths, M.J. *al.ch.d.* Ferndale Secondary S., Rhondda
Hollis, D.L. Skinners' Co.'s S. for Girls, N.
Keeton, T. Brunt's Technical S., Mansfield
Conolly, K.H. *al.f.* Vernon H., Higher Broughton
Davies, M.G. (I.) Merthyr Tydfil Advanced Elem. Girls' S.
Gorringe, M. *d.mu.* Ladies' S., The Close, Brighton
Grant, L. M. Porth Higher Grade S.
Waddington, L.C. *f.* Girls' Secondary S., Halifax
Allward, G.F. Northern Poly. Day S., N.
Green, E.W. *ch.* Devonport P.T. Centre
Lipsett, D. *f.mu.* Merthyr Tydfil Advanced Elem. Girls' S.
Palmer, A. Devonport P.T. Centre
Till, M. St. Mary's Conv., Newlands, Middlesbro'
Willies, M. *d.* Brunt's Technical S., Mansfield
Hearn, G.M. Skinners' Co.'s S. for Girls, N.
Kelly, A. *s.* Convent F.C.J., Birkenhead
Laker, J.E. Girls' Secondary S., Southsea
Thomas, C.J. Merthyr Tydfil Advanced Elem. Girls' S.
Thomas, M.J *d.* Pentre Higher Elem. S., Rhondda
Evans, C. Merthyr Tydfil Advanced Elem. Girls' S.
Heppell, M.D. *d.* Skinners' Co.'s S. for Girls, N.
Leonard, L. Devonport P.T. Centre
McKeown, M. Convent F.C.J., Birkenhead
Michalino, C. *al.f.* English High S., Pera, Constantinople
Andrews, M.A. *f.* Victoria Coll., Belfast
Cremin, M. *f.d.* St. Mary's Convent S., Charleville
Dyer, G. *s.* Summerland Coll., Honiton
Elliott, A. Stalybridge Technical Day S.
Lewis, S. *d.* Ferndale Secondary S., Rhondda
Martin, M.E. Brent Hill S., Hanwell
Morgans, M.J. *d.* Ferndale Secondary S., Rhondda
Rowe, M.A. *s.* Fair Bank, Fulwood, nr. Preston
Bennett, A.M. Girls' Secondary S., Southsea
Huet, G. Annecy Conv., Seaford
Johnson, E. Todd's Nook Council S., Newcastle-on-T.
[1]Rawcliffe, A. Secondary S., Ashton-under-Lyne
[1]Ensum, E.M. Winchmore Hill Coll. S., N.
Grimshaw, H. Stalybridge Technical Day S.
Hunt de Fouilhac, J.M.A. *f.* Ashburne House, Chepstow
Smallwood, E. Redditch Secondary S.
Spilmont, K. *d.* Notre Dame Coll. S., Leeds
Witt, E.F. Heathleigh S., Horsmonden
Brookfield, E.M. *d.* Mayville S., Southsea
Haynes, C. Notre Dame Coll. S., Leeds
Keun, M. *s.f.* English High S., Pera, Constantinople
O'Loughlin, A. St. Mary's High S., Midleton
Thornley, M. *al.d.* Stalybridge Technical Day S.
Cosmetto, C. *d.* English High S., Pera, Constantinople
McNamee, M. Girls' Secondary S., Southsea
Prosser, M.A. Pentre Higher Elem. S., Rhondda
Swan, N.B. Arnot St. Higher Grade S., Walton
[1]Sykes, M. Private tuition
Menoux, S. *f.* Annecy Conv. Seaford
Pelan, M.S. Middle Class S., Stoke Rd., Gosport
Pound, D.M. Kensington H., York
Truscott, A. Devonport P.T. Centre
La Croix, M.G.T. *a.* St. Cuthbert's Coll., Forest Hill
Law, A.K. *gm.* Gordonville Ladies' S., Coleraine
Shaw, W.M. *d.* Skinners' Co.'s S. for Girls, N.
Fenwick, R. *al.* Ferndale Secondary S., Rhondda
Paulden, M.O. Rhianva Coll., Hunstanton
Ronan, H. *d.* Notre Dame Coll. S., Leeds
[1]Dunmore, N.M.J. The Convent, Bexley Rd., Erith
Godsall, M. Pentre Higher Elem. S., Rhondda
Keers, M.J. *d.* Victoria Coll., Belfast
[1]Quille, M.J. St. Mary's Conv., Newlands, Middlesbro'
Stanton, E.D. *s.* Osborne H., Cliftonville, Margate
[1]Bainbridge, F. *d.* Private tuition
Bowman, M. *d.* Brunt's Technical S., Mansfield
Chambers, E. Todd's Nook Council S., Newcastle-on-T.
Clifford, J. *f.* St. Mary's Convent S., Charleville
Glynn, A. *f.* Notre Dame P.T. Coll., L'pool
Grafton, R. St. John's H., Felixstowe
Rock, D.M. Skinners' Co.'s S. for Girls, N.
Taylor, E.M. Devonport P.T. Centre
Burgess, M.C. *f.* The College, Goudhurst
Crispin, E.G. Arnot St. Higher Grade S., Walton
Hughes, L.A. *al.* Ferndale Secondary S., Rhondda
Lloyd, E.H. *al.* Ferndale Secondary S., Rhondda
Pugh, L. *h.* Brunt's Technical S., Mansfield
Ardley, C.M. *f.* Priory S., Earls Colne
Fitzpatrick, C. *s.* Convent F.C.J., Birkenhead
Hamlyn, F.W. *d.* Brent Hill S., Hanwell
Hughes, M. Pentre Higher Elem. S., Rhondda
Learmouth, D.G. Girls' Secondary S., Southsea
Witt, E.M. *d.* Skinners' Co.'s S. for Girls, N.
Hopkins, G. Porth Higher Grade S.
Nesbitt, M.K. Rivington & Blackrod Gram. S., nr. Horwich
[1]Storr, C.E.M. Private tuition
Allen, M.S. Pengwern Coll., Cheltenham
Renn, L.D. *f.* Oakley High S., Southsea
Wilbraham, E.M. *d.* Brunt's Technical S., Mansfield
Banks, M.M. West End S., Lymington
Browne, L. *f.* St. Mary's Conv. S., Charleville
Clark, L. University S., Rochester
Gosling, W.H. Langley H., Dulwich
Rowe, J. Pentre Higher Elem. S., Rhondda
Walker, F. St. Mary's Conv., Newlands, Middlesbro'
Wilkins, W.E. Girl's Secondary S., Southsea
Williams, E.M. Ferndale Secondary S., Rhondda
Bromwich, H.M. Oxford High S. for Girls
Clay, M.H. Manchester Municipal Secondary S.
Coghlan, H. *ch.* Adelphi H., Salford
Coombe, E. Devonport P.T. Centre
Holmes, G.A. Skinners' Co.'s S. for Girls, N.
McCall, J. *al.* High S., Leek
Stonham, F.E. *f.* The College, Goudhurst
Wright, M. *f.ge.* Tower H., Melton Mowbray
Billinghurst, M.A. *d.* Girls' Secondary S., Southsea
[1]Eyre, M.E. Private tuition
[1]Hudner, A. Private tuition
Burlace, R.A. Devonport P.T. Centre
Clark, O.E.F. *s.d.* Private tuition
Collins, E. *al.* Arnot St. Higher Grade S., Walton

GIRLS, 2ND CLASS, PASS—*Continued.*

O'Rourke, A. St. Mary's Conv., Newlands, Middlesbro'
Wilkinson, M.M. East Bridgford College
Goskirk, M. Carlisle Higher Grade S.
Hopkins, M.A. Pentre Higher Elem. S., Rhondda
Jopling, R. Friends' S., Wigton
Neale, M.A. Girls' Secondary S., Southsea
Parr, M. *al.* Rivington & Blackrod Gram. S., nr. Horwich
Powell, A. *d.* Private tuition
Bowden, D.V. Skinners' Co.'s S. for Girls, N.
Browne, M. *f.* St. Mary's Conv. S., Charleville
Colmer, O.M. Woolston Ladies' Coll., Southampton
Frank, G. Beighton H., Sheffield
Fry, E. Central Girls' S., Southampton
Huntington, M. Carlisle Higher Grade S.
[1]Lalor, L.G. Private tuition
Howard, M. *d.* Longmoor Lane Council S., Liverpool
Juniper, I.M. Girls' Secondary S., Southsea
Williams, A.J. Pentre Higher Elem. S., Rhondda
Couzens, M.E. Girls' Secondary S., Southsea
Darvill, E. *s.d.* The College, Goudhurst
Fletcher, K.L. Cranbury High S. for Girls, Southampton
Layton, D.N. *s.* King Edward's Gram. S., B'ham
Bruce, D.R. The College, Goudhurst
Griffiths, D. Pentre Higher Elem. S., Rhondda
Spencer, G. Skinners' Co.'s S. for Girls, N.
[1]Squire, M.L. Gram. S., Camelford
Coache, M. Annecy Conv., Seaford
Levy, M. *sp.* Loreto Conv., Europa, Gibraltar
Powell, E. Ferndale Secondary S., Rhondda
Swift, E. Notre Dame Coll. S., Leeds
Cliff, D.A. The Rectory, Failsworth
Cotterill, F. High S., Leek
Eminton, H.A. Girls' Secondary S., Southsea
Jones, C.H. Ferndale Secondary S., Rhondda
Kirk, D. *d.* Brunt's Technical S., Mansfield
Langworthy, A. *f.* Girls' Secondary S., Southsea
Lenahan, L. Notre Dame Coll. S., Leeds
Walker, E. *d.* West Bridgford Hr. Grade Council S.
Ayres, E.M. *d.* Devonport P.T. Centre
Boyland, E.R. Girls' Secondary S., Southsea
Ells, D. *s.* Middle Class S., Stoke Rd., Gosport
Ingram, E. Devizes Secondary S.
Lewis, M.J. Ferndale Secondary S., Rhondda
May, E.M. The College, Goudhurst
McBurnie, D. Longmore Lane Council S., Liverpool
Osborn, E.G. Skinners' Co.'s S. for Girls, N.
Pitcher, G. *d.* Guinevere, Torquay
Robertson, R.D. Wincham Hall Coll., Northwich
Tickle, M.L. Private tuition
Christian, P. The Dulwich Hamlet S., S.E.
Gower, W.M. Winchmore Hill Coll. S., N.
Riley, M. St. Mary's Conv., Newlands, Middlesbro'
Johnson, V.M.A. Ivy H., Havant
Brice, W.M. St. John's H., Felixstowe
Cunnington, M.E. Ashley High S., Long Sutton
Down, H.M. Central Girls' S., Southampton
[1]Liddicoat, A.G.M. St. Austell P.T. Centre
Marshall, E.R. Brookvale Coll., Belfast
McAuliffe, N. St. Mary's High S., Midleton
Sissons, E. *d.* Brunt's Technical S., Mansfield
Taylor, A.M. Devonport P.T. Centre
Gemmell, D.I.M. Private tuition
Hammond, E.W. Simon Langton's Girls' S., Canterbury
Parker, D. St. Winifred's High S., Southampton
[1]Porter, M.J. Victoria Coll., Liverpool
Beaver, J.B. Oakley High S., Southsea
Davidson, C.L. Girls' Secondary S., Southsea
Howes, A. Pengwern Coll., Cheltenham
King, E.M. Arnot St. Higher Grade S., Walton
Livsey, W.G. Merthyr Tydfil Advanced Elem. Girls' S.
Curtis, E.M. Girls' Secondary S., Southsea
Lakey, B. Johnston Terrace S., Devonport
Pearce, E. Merthyr Tydfil Advanced Elem. Girls' S.
Roberts, F.R. Llanfair H., Kington
Scott, F.H. Devonport P.T. Centre
White, C. P.T. Centre, Southport
Brown, B.O. Girls' Secondary S., Southsea
Cooke, D. Carlisle Higher Grade S.
Leahy, J. St. Mary's Conv., Newlands, Middlesbro'
Lewis, H. Arnot St. Higher Grade S., Walton
Mountain, D. *d.* Beighton H., Sheffield
Davies, M.L. Pentre Higher Elem. S., Rhondda
Gamble, M. Gram. S., Quorn
Geoffrey, E. Oakley High S., Southsea
Gray, H. West Bridgford Hr. Grade Council S.
Kershaw, A.S. Skinners' Co.'s S. for Girls, N.
Taylor, E.A. Porth Higher Grade S.
Taylor, J. Stalybridge Technical Day S.
[1]Vickers R.G. *d.* Secondary S., Ashton-under-Lyne
Williams, E. Devonport P. T. Centre
French, L.C. Redditch Secondary S.
Glover, D.M.C. Marlborough H., Clifton
Lloyd, M. Ferndale Secondary S., Rhondda
Mills, B. Penpol Girls' S., Hayle
Munson, F.A. *d.* Ashley High S., Long Sutton
Thomas, S. Ferndale Secondary S., Rhondda
Warren, M.K. Girls' Secondary S., Southsea
Bowman, R. *f.* Annecy Convent, Seaford
Cahill, F. Mercy Conv., Birr
Dixon, C.K. Glenarm Coll., Ilford
Stiles, F.A. *d.* Central Higher Grade S., Acton
Cross, G.P. Horsham P.T. Centre
Hunter, A.V. Melbourne Coll., Thornton Heath
Janz, T.M. The Convent, Bexley Rd., Erith
Keeshan, V.J.F. Central Higher Grade S., Acton
Nichol, F. St. Winifred's High S., Southampton
Baker, A. *ma.* Porth Higher Grade S.
Bishop, H.M. Northern Polytechnic Day S., N.
Jaquiss, A.R. Arnot St. Higher Grade S., Walton
Powell, M. Porth Higher Grade S.
Ryder, W.E.A. Devonport P.T. Centre
Deignan, L. Mercy Conv., Birr
Haywood, N. Brunt's Technical S., Mansfield
Newling, B.M. *d.* P.T. Centre, Southport
Styler, A. Redditch Secondary S.
Usher, D.L. Private tuition
Brennan, J. Mercy Conv., Birr
Daykin, F. Brunt's Technical S., Mansfield
Freeman, M. St. Winifred's High S., Southampton
Lyons, E.M. Porth Higher Grade S.
Morgan, M. Porth Higher Grade S.
Owen, M.J. Porth Higher Grade S.
Wheeler, G. *d.* Private tuition
Fox, M. *a.d.* Penzance P.T. Centre.
Hawkins, D.M. Girls' Secondary S., Southsea
Kidd, M. Private tuition
Rundle, E.T. Girls' Coll. S., Falmouth
[1]Bellamy, E.H. Private tuition
Edwards, L. Pentre Higher Elem. S., Rhondda
Mansfield, E. Carlisle Higher Grade S.
Sills, D.K. Buckingham Pl. Acad., Landport, Portsmouth
Wootton, A.M. Gram. S., Quorn
Attwell, S.E. *f.* Upper St. Leonards Ladies' Coll.
Cussen, M. Mercy Conv., Birr
Doman, K.E. West End S., Lymington
Dunn, F.E.B. *d.* The Magnolias, Southsea
Lawlor, H. Notre Dame Coll. S., Leeds
Robertson, J.E. Finsbury Pk. High S., Adolphus Rd., N.
Thomas, M. Pentre Higher Elem. S., Rhondda
Barbour, A.A. 26 Trinity Rd., Bootle
Clifton, R. Parc Bracket Coll., Camborne
Cole, K. Devonport P.T. Centre
Garstin, M.M. *f.* Private tuition
Hempsall, S. Brunt's Technical S., Mansfield
Jackson, E.G. Victoria Coll., Belfast
Lacey, J. Notre Dame Coll. S., Leeds
Gibson, E. Todd's Nook Council S., Newcastle-on-T.
Hall, V.J. Ferndale Secondary S., Rhondda
[1]Mitchell, V. Gram. S., Camelford
Musker, M. 26 Trinity Rd., Bootle
Pickering, F.E. *al.* Private tuition
Burton, E.A. *d.* Skinners' Co.'s S. for Girls, N.
Goodchild, A.L. *d.* Skinners' Co.'s S. for Girls, N.
Ives, W.M. Skinners' Co.'s S. for Girls, N.
Nicholson, I.K. The College, Oswestry
Rogers, C. Porth Higher Grade S.
Standing, I. Chichester P.T. Centre
Anderson, F.V. *d.* Skinners' Co.'s S. for Girls, N.
Baker, F.M. Private tuition
Binns, C.M. Teddesley H., Walsall
Brimmell, A.M. St. Cloud, Southsea
Cramer, G.E. Devonport P.T. Centre
Fitchew, L. Central Higher Grade S., Acton
Gale, E.G. Central Higher Grade S., Acton
Lewis, E. *a.* Longmoor Lane Council S., Liverpool
Michell, I.V. Penzance P.T. Centre
Sparks, M. *al.* Comm. S., High Rd., Wood Green
Taylor, E.M. *s.* Fartown Gram. S., Huddersfield
Atkins, M.O. St. Cross, Whitchurch
James, E.M. Ferndale Secondary S., Rhondda
Turkington, S.J.I. Victoria Coll., Belfast
Foy, A. *d.* High S., The Green, Twickenham
Hardacre, E.M. Kensington H., York
Scoyne, E. Notre Dame P.T. Coll., L'pool
Walker, L.A. Winchmore Hill Coll. S., N.
Warren, M.A. Winchmore Hill Coll. S., N.
Bickerton, E Private tuition
Cogan, G. Notre Dame Coll. S., Leeds
Hanson, E. Rivington & Blackrod Gram. S., nr. Horwich
Hunt, E.A. *d.* Longmoor Lane Council S., Liverpool
Lewis, C. Pentre Higher Elem. S., Rhondda
Norris, E.A. *f.* Central Higher Grade S., Acton
Pyne, E.M. Girls' Secondary S., Southsea
Bamford, J. *al.* Private tuition
[1]Buckley, J. Private tuition
Rapley, M. Notre Dame Coll. S., Leeds
Wilcox, D.P. Central Higher Grade S., Acton
Gardiner, B. *d.* Private tuition
Hart, A. Arnot St. Higher Grade S., Walton
Maisey, C.H. Private tuition
Morley, E.N. Private tuition
Thomas, M.A. Ferndale Secondary S., Rhondda
Barry, E. *f.* St. Mary's Conv. S., Buttevant
Charman, D.M. Horsham P.T. Centre
Hamilton, E. Heathleigh S., Horsmonden
Lewis, G.A. Girls' Secondary S., Southsea
McPartlan, A. St. Mary's Conv., Newlands, Middlesbro'
Pellett, E. Horsham P.T. Centre
Bevan, E. St. Maur Coll., Chepstow
Brumly, E.K. Girls' Secondary S., Southsea
Churchward, R.M. Devonport P.T. Centre
Dixon, E.M.P. Longmoor Lane Council S., Liverpool
Hogan, A. Notre Dame Coll. S., Leeds
Proctor, E. Private tuition
Robinson, E.M. Tunbridge Wells High S.
Tait, I.L. Arnot St. Higher Grade S., Walton
Alexander, F. *f.* Oriel Coll. S., Larne
Eynon, E. Arnot St. Higher Grade S., Walton
Osborne, C. Gordon Sq. S. for Girls, W.C.
Coules, R.C. Parc Brackett Coll., Camborne
Mayne, A.G. Preswylfa High S., Cardiff
Gapes, W.E. Clark's College S., Brixton Hill
O'Donoghoe, M. Notre Dame Coll. S., Leeds
Peacock, M. Todd's Nook Council S., Newcastle-on-T.
Williams, T. Pentre Higher Elem. S., Rhondda
Carew, E. Notre Dame Coll. S., Leeds
Keatley, P. *d.* West Bridgford Hr. Grade Council S.
O'Halloran, T. Notre Dame Coll. S., Leeds
Turner, M.B. Central Higher Grade S., Acton
Woodcock, R.G. Fartown Gram. S., Huddersfield
Connelly, K. Adelphi H., Salford
Forshaw, A. P.T. Centre, Southport
Griffiths, A.M. Preswylfa High S., Cardiff
Newman, L. St. Maur Coll., Chepstow
Rees, M. Ferndale Secondary S., Rhondda
Shield, E. Friends' S., Wigton
Bond, M. *f.* Notre Dame Coll. S., Leeds
Hardy, M. *f.* Grannum Lodge, Edgerton, Huddersfield
Lewis, A.M. Ferndale Secondary S., Rhondda
Moss, M. Private tuition
Wood, C. Todd's Nook Council S., Newcastle-on-T.
Baron, M.M. Catholic Gram. S., St. Helens
Dixon, I.J. The Haughton S., York
Evans, L.M. *al.* Private tuition
Evans, S.J. Pentre Higher Elem. S., Rhondda
Rowell, J. Private tuition
Slattery, H. St. Mary's Conv., Bruff
Turner, W.N. Clark's College S., Brixton Hill.
[1]Conwell, E. Private tuition
Eason, R.E. Ashley High S., Long Sutton
Nicholson, L. Todd's Nook Council S., Newcastle-on-T.
Power, A. Adelphi H., Salford
Richards, R.J. Porth Higher Grade S.
Shakspeare, M.A. Trinity District S., Wavertree
Tabor, S.M. St. Cuthbert's Coll., Forest Hill

THIRD CLASS.

Honours Division.

Christides, P. *e.a.al.f.* English High S., Pera, Constantinople
Adjemian, N. *e.f.* English High S., Pera, Constantinople
Vartanian, A. *gm.* English High S., Pera, Constantinople
Bell, L. *e.f.d.* Gordonville Ladies' S., Coleraine
Coffin, R.C. *e.f.d.* Girton H., Chislehurst
O'Donoghue, L. *al.f.d.* St. Mary's High S., Midleton
Lloyd, R. *s.e.a.f.* Raleigh Middle Class S., Stoke Newington
Black, M. *e.f.* Loreto Conv., Europa, Gibraltar
Barnard, O. *e.f.d.* Holmwood Coll., Westcliff-on-Sea
Cremin, H. *e.a.f.sc.* St. Mary's Conv. S., Charleville
Petey, J.F. *e.f.sc.d.* Private tuition
Prosser, B. *s.a.* Merthyr Tydfil Advanced Elem. Girls' S.
Robinson, J.M. *e.f.ge.* Private tuition
Price, A.R. *s.e.h.a.* Merthyr Tydfil Advanced Elem. Girls' S.
Wilcox, C.G. *e.* Private tuition
Davies, M.A. *e.sc.* Pentre Higher Elem. S., Rhondda
Novella, C. *e.f.sp.d.* Loreto Conv., Europa, Gibraltar
Stevens, W.D. *a.* Raleigh Middle Class S., Stoke Newington
Budds, R.D. *a.d.* Lynsted Coll. S., Greenstreet
Mattrat, H.J. *f.* Private tuition
Pouris, T. *f.* English High S., Pera, Constantinople
Woolley, K. *a.al.f.* Loreto Conv., Europa, Gibraltar
Woolley, M. Loreto Conv., Europa, Gibraltar
Bromwich, G.M. Penrith High S., Stoke Newington
Denison, C. *e.a.d.* Saxonholme High S., Whalley Range, Manchester
Magnant, T. *s.f.* Ursuline Convent, Kingsland
Theophilus, M.A. *e.a.* Merthyr Tydfil Advanced Elem. Girls' S.
Crowhurst, E.M. Girton H., Chislehurst
Caldwell, M. *e.f.* Gordonville Ladies' S., Coleraine
Coffey, M. *e.* St. Mary's High S., Midleton
Kelleher, L. *e.f.* St. Mary's High S., Midleton
McKennill, S.R. *f.* Benedictine Conv. S., Dumfries
Cain, L. *e.a.* Stoke Public Girls' S., Devonport
Corkery, L. *e.a.f.d.* St. Mary's Conv. S., Charleville
Friend, S. *e.f.* Bow Modern S., Bow Rd., E.
Pim, C.A. *e.a.* Friends' S., Mountmellick
Reynolds, M.M. *e.w.* Pentre Higher Elem. S., Rhondda
Blyth, L. *e.g.* Holmwood Coll., Westcliff-on-Sea
Booth, M.E. *e.f.* Manor H., Woodbridge
Harrhy, E.M. *e.d.* Shenley H., Highgate
Roe, E.S. *e.* Penrith High S., Stoke Newington
Alfaro, M.I. *f.sp.* The Conv. High S., Highgate Rd., N.W.
O'Brien, H.N. *e.* Benedictine Conv. S., Dumfries
Fletcher, C. Greycourt, Southport
Purcell, A. *e.f.d.* St. Mary's Conv. S., Charleville
Moon, B. *e.a.* Rye Coll. S., Rye
Morgan, M.A. *e.* Pentre Higher Elem. S., Rhondda
Worsfold, B. *e.a.* Victoria H., Dorking

THIRD CLASS.

Pass Division.

[2]Curtis, B.I. Girls' Gram. S., Levenshulme
[2]Howe, N. *f.* Skinners' Co.'s S. for Girls, N.
[2]Nash, A.F. Brunt's Technical S., Mansfield
[2]Price, G.M. Merthyr Tydfil Advanced Elem. Girls' S.
[2]Wearn, L.M. Girls' Secondary S., Southsea
[2]Harman, V.M. *d.* Upper St. Leonards Ladies' Coll.
[2]Dryden, E. Northern Polytechnic Day S., N.
[2]Waters, M.B. *f.* Heathleigh S., Horsmonden
[2]Phillips, D. Boughrood H., Brecon
[2]Watts, L. Convent F.C.J., Birkenhead
[2]Angell, G.M. Woolston Ladies' Coll., Southampton
[2]Hall, F.M. *f.* Upper St. Leonards Ladies' Coll.
[2]Mills, K.H. Ferndale Secondary S., Rhondda
[2]O'Sullivan, M. *f.d.* St. Mary's Conv., Bruff
[2]Jackson, M.E. Carlisle Higher Grade S.
[2]Mesher, T.J. Upper St. Leonards Ladies' Coll.
[2]Van Dort, G.E. *f.* Granville Coll., Southampton
[2]Cromie, M. Brookvale Coll. S., Belfast
[2]Wheller, F. University S., Rochester
[2]Maloney, K. Notre Dame Coll. S., Leeds
[2]Dixon, K. Friends' S., Wigton
[2]Law, K. Montpellier S., Cork
[2]Ross, I. *f.* Montpellier S., Cork

GIRLS, 3RD CLASS PASS—*Continued.*

²Stillwell, T. Redditch Secondary S.
²Walton, H.M.A. Gosberton Hall Coll., nr. Spalding
²Kelly, D. St. Mary's Conv., Newlands, Middlesbro'
²Norton, E. The Magnolias, Southsea
²du Domaine, L.A. *f.* Hurst Leigh, Southampton
²Franks, H.E. Ashley High S., Long Sutton
²Addington, M.B. *f.* Convent S., Exmouth
²Atkinson, M.L. Friends' S., Wigton
²Ursell, E.M. Merthyr Tydfil Advanced Elem. Girls' S.
²Broomhead, F. Private tuition
²Jeffery, A. Ferndale Secondary S., Rhondda
²Vaughan, E. Pentre Higher Elem. S., Rhondda
Malone, K. *f.* Stoneleigh Coll., Porthcawl
²Duncan, E.A. 26 Trinity Rd., Bootle
²Heather, H.G. Buckingham Pl. Acad., Landport, Portsmouth
²Pout, E.M. Wellington S., Deal
Baker, A.C. Elm H., Ealing
Copp, E.W. *e.a.d.* Priory Coll., Hornsey
²Hawkesworth, H. Carlisle Higher Grade S.
²Rayner, S.G. Priory S., Earls Colne
²Roberts, G. Pentre Higher Elem. S., Rhondda
White, B. *e.f.* Clare Lodge S., Newcastle
Chubb, D.N. Penrith High S., Stoke Newington
Dodds, E.E. *a.* Raleigh Middle Class S., Stoke Newington
Harding, E.C. *e.* Calder H., Seascale
Levrero, M.L. *e.sp.mu.* St. Francis Xavier's Conv., Gibraltar
²Rowe, E.G. *d.* Central Higher Grade S., Acton
Sharp, A.E. East Bridgford College
Williams, G. *s.d.* Rhianva Coll., Hunstanton
Grafton, J. *d.* Private tuition
Lewis, A.B. *sc.* Porth Higher Grade S.
²Maunder, D. Arnot St. Higher Grade S., Walton
²Potter, D. *d.* Horsham P.T. Centre
²Ridley, E. Carlisle Higher Grade S.
²Bodycot, N. Upper St. Leonards Ladies' Coll.
Bowes, B. *bk.* Mercy Conv., Birr
²Clarke, M.G. 13 Stranmillis Rd., Belfast
²Dow, E.M. *d.* Granville Coll., Southampton
Raphael, M.A. Carlisle Higher Grade S.
²Russell, L. Notre Dame Coll. S., Leeds
Willmott, B. Penrith High S., Stoke Newington
²Dale, E.M. Girls' Secondary S., Southsea
²Gardiner, P.E. Pengwern Coll., Cheltenham
²James, E.L. Porth Higher Grade S.
Levis, A.E. *a.d.* Private tuition
²Pearce, A. P.T. Centre, Southport
²Arundel, E. Mr. Hunter's S., Bolsover, Chesterfield
²Braithwaite, M.A. Teddesley H., Walsall
Denison, G. *s.e.* West Bridgford Hr. Grade Council S.
Garfit, D. Oakmere, Northwich
Hughes, I. *e.* Sussex H., Rye
Jones, L. *e.a.* Merthyr Tydfil Advanced Elem. Girls' S.
Jones, M. *e.h* Merthyr Tydfil Advanced Elem. Girls' S.
Jones, R. *e.w.* Pentre Higher Elem. S., Rhondda
Leyshon, A.G. *e.* Porth Higher Grade S.
²Lloyd, E. Hampton Gram. S., Glasbury-on-Wye
²Love, W. Gordonville Ladies' S., Coleraine
²Macaulay, M. St. Mary's Convent, Bruff
Naoum, Z. *f.* English High S., Pera, Constantinople
²Pearce, D.C. Private tuition
Rodriguez, P. *d.* Loreto Conv. Europa, Gibraltar
²Stericker, M. Wincham Hall Coll., Northwich
Wilks, E.B. *s.g.* Priory Coll., Hornsey
Browne, N. *a. f.* St. Mary's Convent S., Charleville
Garrett, I.A.M. *e.* Glen Tower High S., Highgate
Gornall, G. *a.* Girls' S., Promenade, S. Shore, Blackpool
Rickard, D. *e.* Stoke Public Girls' S., Devonport
²Spiers, D.M. Redditch Secondary S.
Waddell, E. *f.* Private tuition
Whitfield, E.M. *e.* Preparatory S., Oswestry
Burtles, M. Girls' Gram. S., Levenshulme
²Davies, J. Pentre Higher Elem. S., Rhondda
Dean, E.A. *a.* Rye Coll. S., Rye
²Drayscy, D.L. Pengwern Coll., Cheltenham
Hampson, M.A. *s.e.* Tower H., Melton Mowbray
²Kennett, E.B. The College, Oswestry
Oliver, E. *e.f.ge.* Manor House Conv., Surbiton
Rodriguez, E. *e.f.sp.* Loreto Conv., Europa, Gibraltar
Bailey, R. Parc Bracket Coll., Camborne
Barker, S.E. Old Gram. S., Botesdale, Diss
²Fourt, A.D. Redditch Secondary S.
Francis, M.M. *e.* Pentre Higher Elem. S., Rhondda
Heather, I.J. Friends' S., Mountmellick
²Jones, S.A. Pentre Higher Elem. S., Rhondda
Maine, F. *e.a.* Pentre Higher Elem. S., Rhondda
Riordan, K. *a.d.* St. Mary's Conv., Bruff
Salmon, F.M. Crafnant S., Buckhurst Hill
Connell, T. Gordonville Ladies' S., Coleraine
²Corby, L. Hill Croft S., Wellingborough
Cording, C.M.E. *e.a.* Longmoor Lane Council S., Liverpool
²Hagger, A.M.M. St. John's H., Felixstowe
Smith, F.E. *a.* Buckingham Pl. Acad., Landport, Portsmouth
²Thomas, V. Penventon S., Redruth
²Trevett, E.R. The Magnolias, Southsea
Anderson, R. *e.f.* Conv. of the Assumption, Richmond
Booth, E.M. Craiglands Coll. S., Blackpool
²Buggs, E.A. Heathleigh S., Horsmonden
Coyle, E. Mercy Conv., Birr
²Dobinson, C.N. Carlisle Higher Grade S.
Ogden, O. *a.* Stoke Public Girls' S., Devonport
Owen, A. *e.a.* Merthyr Tydfil Advanced Elem. Girls' S.
Power, C.M. *e.* Conv. La Sainte Union, Banagher
Whitehead, C. *e.* Carlisle Higher Grade S.
Blake, D.M. *e.* Penrith High S., Stoke Newington
²Bradley, I.M. Hill Croft S., Bentham
²Brown, B.A. Ashley High S., Long Sutton
Gower, L.M. Boldrewood, Red Hill
²Jones, D.I. Preswylfa High S., Cardiff
McCarthy, M.M. *e.d.* St. Mary's High S., Midleton
Perkins, M.A. Porth Higher Grade S.
²Reynolds, B. Alverton S. for Girls, Penzance
Richardson, C.A.A. *e.* Central Higher Grade S., Acton
St. Stephens, N. *f.ge.* Private tuition
Tucker, M.E. *d.* Gosberton Hall Coll., nr. Spalding
²Whittick, G.M. Petersfield Girls' S.
²Wigley, G.F. Porth Higher Grade S.
Hasluck, D. *f.* Loreto Conv., Europa, Gibraltar
²Higgins, M. St. Mary's Conv., Bruff
²Jones, A. Ferndale Secondary S., Rhondda
²Mahony, R. The Convent High S., Highgate Rd., N.W.
²McDonald, M. Adelphi H., Salford
Morrell, B. *a.* Stoke Public Girls' S., Devonport
O'Connor, K.J. *e.* Conv. La Sainte Union, Banagher
²Weir, M.A. Woodside Coll., Southsea
Bousfield, A.M.S. Friends' S., Mountmellick
Bubbs, I.G. *d.* Lynsted Coll. S., Greenstreet
Chubb, W.C. Penrith High S., Stoke Newington
²Dry, D.M. Arnot St. Higher Grade S., Walton
Evans, M. *e.w.* Pentre Higher Elem. S., Rhondda
Gallager, M.J. *s.* Conv. La Sainte Union, Banagher
Herbert, C.M. Porth Higher Grade S.
²Jones, T. Pentre Higher Elem. S., Rhondda
Morgan, E.A. *e.* Frankfort High S., Forest Hill
Smith, K.E. *d.* Eastrop H., Chichester
Allen, M.A. Melbourne Coll., Thornton Heath
²Edwards, A.J. Pentre Higher Elem S., Rhondda
Gardner, S.A. *f.* Victoria Coll., Belfast
Gilberthorpe, L.A. Firth Pk. High S., Pitsmoor, Sheffield
²Herbert, F. Broadfield, Rochdale
Jackson, J.N. Longmoor Lane Council S., Liverpool
²James, V.A. Porth Higher Grade S.
Lally, A. Notre Dame Coll. S., Leeds
Leduc, B. *d.* English High S., Pera, Constantinople
Morris, V.S. *s.e.* Highams Park S., Hale End
Oliphant, E.M. Ashlea H., Southend-on-Sea
²Swallow, M.F. Northfields S., West Ealing
²Wells, E.A. Kyleglas, Albany Rd., Southsea
Dickson, E.E. Intermediate S., Lalghar, Knock
Gordon, M. *ge.* Crofton H., Manchester
²Hamon, M. Adelphi H., Salford
²Lees, M.E. St. John's S., Lichfield
Marks, A. Tudor House, Exeter
Pickup, G. Girls' S., Promenade, S. Shore, Blackpool
Williams, E.B. *e.* Pentre Higher Elem. S., Rhondda
Byrne, T. Mercy Conv., Birr
²Crosskill, M.M. West Bridgford Hr. Grade Council S.
²Dale, D. Llanfair H., Kington
²Dale, V. Green Secondary S., Isleworth
Davies, E. *w.* Pentre Higher Elem. S., Rhondda
Heckford, A.M. *s.e.* Colne Valley S., Rickmansworth
Jones, L.A. *a.* Merthyr Tydfil Advanced Elem. Girls' S.
Llewellyn, E. *s.* Boughrood H., Brecon
Rodgers, I. Longmoor Lane Council S., Liverpool
²Tett, R.D. Central Higher Grade S., Acton
²Thomas, M.K. Private tuition
Vanhouse, H.W. *e.* Breakspear Coll., Brockley
²Clark, H.D. Spalding Gram. S.
Hill, M.H. Shamrock H., Palmer's Green
²Hynes, N. St. Mary's Conv., Bruff
²Jones, O. Porth Higher Grade S.
²Maddern, J. Penzance P.T. Centre
Oudinet, R.J. *f.* Priory S., Earls Colne
Warren, E.M. Winchmore Hill Coll. S.
²Abernethy, E.McD. Wincham Hall Coll., Northwich
Boyd, M. *e.* Intermediate S., Lalghar, Knock
²Collings, G.M. Private tuition
²Courvoisier, Y. 13 Stranmillis Rd., Belfast
Davies, B. *e.* Merthyr Tydfil Advanced Elem. Girls' S.
Davies, B.M. *e.* Merthyr Tydfil Advanced Elem. Girls' S.
Durell, J. *e.* Holmwood Coll., Westcliff-on-Sea
Munn, M. St. Joseph's Priory, Dorking
²Parker, M. Private tuition
Rowe, B. The Conv., Bexley Rd., Erith
²Sheahan, M. Adelphi H., Salford
Stonham, K.H. *e.f.* The College, Goudhurst
Terry, F.E. *e.* Middle Class S., The Athenæum, Maidstone
²Ambler, I. Stalybridge Technical Day S.
Coates, M.A. Raleigh Middle Class S., Stoke Newington
Davies, S. Merthyr Tydfil Advanced Elem. Girls' S.
Evans, A.M. *e.* Merthyr Tydfil Advanced Elem. Girls' S.
Holliday, A. Craiglands Coll. S., Blackpool
²Murray, G.E. Municipal Technical Inst., Portsmouth
Perkins, K.M. Gram. S., Quorn
Powell, J. *e.* Merthyr Tydfil Advanced Elem. Girls' S.
²Sheahan, E. Adelphi House, Salford
Thompson, P. Carlisle Higher Grade S.
Tough, G.H. Calder H., Seascale
Weeks, M. Friends' S., Wigton
Ashby, C. Lynstead Coll. S., Greenstreet
²Bewley, R.I. Longmoor Lane Council S., Liverpool
Charles, G.A. Pentre Higher Elem. S., Rhondda
Fleming, M. St. Mary's Conv., Bruff
Hambling, I.E. *a.* Old Gram. S., Botesdale, Diss
²Hartley, D.T. Revoe Council S., Blackpool
²Jones, J.A. Porth Higher Grade S.
²Lemmon, V. Firth Pk. High S., Pitsmoor, Sheffield
Voisey, G.M.C. Doreck Kindergarten & S., Kensington Gdns. Sq., W.
Watson, J.M. The College, Goudhurst
Wells, H.M. Queen's Coll., Wandsworth Common
Yapp, G.M. 26 Trinity Rd., Bootle
Barfoot, D.L. *e.* The College, Goudhurst
²Clarke, L. Victoria Coll., Belfast
²Dillworth, M.B. Spalding Gram. S.
²Hooper, M.C. Preswylfa High S., Cardiff
²Laugher, E.C. Private tuition
²Lenihan, M. Notre Dame Coll. S., Leeds
Malcolm, E.F. *e.f.* The College, Goudhurst
Meredith, B. Merthyr Tydfil Advanced Elem. Girls' S.
O'Grady, D. *e.* St Mary's Conv., Bruff
²Schreiber, G.M. The College, Oswestry
²Seffer, S. Skinners' Co.'s S. for Girls, N.
Slinger, M. Hill Croft S., Bentham
Thomas, E.E. Pentre Higher Elem. S., Rhondda
Verstaevaal, M. *f.* Notre Dame de France, Leicester Pl., W.C.
²Batten, R.A.D.C. Calder H., Seascale
Crease, E.I. *e.a.* Longmoor Lane Council S., Liverpool
Crowley, K. St. Mary's High S., Midleton
Damant, M.E. Shenley H., Highgate
Ervine, E.M. *e.* Ulster Provincial S., Lisburn
Harding, M.E. Upper St. Leonards Ladies' Coll.
²Howe, M.P. Catholic High S., Grove Rd., Southsea
Jacobs, K.E. Wincham Hall Coll., Northwich
Jones, G.M. Merthyr Tydfil Advanced Elem. Girls' S.
Kelly, M. Arnot St. Higher Grade S., Walton
²Lavender, P.A.M. Woodside Coll., Southsea
²Martin, F.D. Clark's College S., Brixton Hill, S.W.
²Morey, D.C. Petersfield Girls' S.
²Pexton, K. Adelphi H., Salford
²Riley, F. Adelphi H., Salford
Sykes, M. *e.f.* Private tuition
Taylerson, B. *a.* Longmoor Lane Council S., Liverpool
Watkinson, E. *e.a.* Bloomfield Coll. S., Belfast
Weston, F.C. Arnot St. Higher Grade S., Walton
Ayres, G.G. *s.* Cranley House Coll. S., Muswell Hill
Casswell, K.E. Gosberton Hall Coll., nr. Spalding
Cristol, R. Somerset H., Ramsgate
Downey, J.M. *e.* Friends' S., Mountmellick
Driver, M.E. Ashley High S., Long Sutton
²Evans, M. Pentre Higher Elem. S., Rhondda
Gardiner, E. Carlisle Higher Grade S.
Griffin, E.M. *e.* Ravenscourt H., Ravenscourt Park, W.
²Jackson, F.B. Clark's College S., Brixton Hill, S.W.
Johnston, L.M. *d.* Gram. S., Bandon
²Knightley, E. Central Higher Grade S., Acton
Pamphilon, V.M. Congleton Ladies' Coll.
²Reardon, A. Porth Higher Grade S.
Thollet, J.C. *f.* Private tuition
²Wain, C. Ivy House, Hanwell
Bellas, E. *f.* Private tuition
Carter, F. Parc Bracket Coll., Camborne
Evans, F.W. Preswylfa High S., Cardiff
Evans, S. *e.* Porth Higher Grade S.
²Flynn, T. St. Mary's Conv., Bruff
Haughton, R.A. Friends' S., Mountmellick
Gerrard, V. Ashlea H., Southend-on-Sea
Lyons, K.T.S. *e.f.* University S., Rochester
Mahon, M.A. *f.* Victoria Coll., Belfast
Newman, E.K. Felix H., Dulwich
Pace, E.M. *a.* Arnot St. Higher Grade S., Walton
Plewman, E.G. Friends' S., Mountmellick
Sawney, M.I. Raleigh Middle Class S., Stoke Newington
²Scarborow, J.M.M. Devonshire Rd. S., Forest Hill
²Shaw, M. High S., Leek
Stack, A.J. Friends' S., Mountmellick
Whale, E.M. Eastrop H., Chichester
²Allison, G.D. Private tuition
Bullock, E.A. Lansdowne Coll., Notting Hill
Davies, A. Porth Higher Grade S.
²Degalle, G.H. Mansfield H. Ladies' Coll., Cliftonville, Margate
Fletcher, N. Rye Coll. S., Rye
Gaggero, M. *sp.* St. Francis Xavier's Conv., Gibraltar
Hutchings, E.M. *s.* Firth Pk. High S., Pitsmoor, Sheffield
Lilly, L.M. *e.* Old Gram. S., Botesdale, Diss
Madden, M. St. Mary's Conv., Bruff
O'Connell, E. St. Mary's Conv., Bruff
Parry Jones, M. Preparatory S., Oswestry
Price, M. Merthyr Tydfil Advanced Elem. Girls' S.
Sproston, M. Congleton Ladies' Coll.
Thatcher, F. Pentre Higher Elem. S., Rhondda
²Barnes, M. St. Mary's Conv., Newlands, Middlesbro'
Colliver, M. *e.* Alverton S. for Girls, Penzance
Glynn, G.A. Conv. La Sainte Union, Banagher
Hudson, A.W. *a.* Redby Girls' S., Sunderland
Joynson, M.L. Longmoor Lane Council S., Liverpool
²Leake, K.M. Private tuition
Long, H. Central Girls' S., Southampton
McDonald, E. *a.d.* Arnot St. Higher Grade S., Walton
Moxley, E.E. Redland Coll. S., Bristol
O'Brien, N.M. Benedictine Conv. S., Dumfries
Power, M.B. Conv. La Sainte Union, Banagher
Shandel, E. Somerset H., Ramsgate
Shanley, M.E. *d.* Benedictine Conv. S., Dumfries
Spillane, I. St. Mary's High S., Midleton
Thorn, M. Merthyr Tydfil Advanced Elem. Girls' S.
Bennett, H.M. Rhianva Coll., Hunstanton
Clark, D.G. The College, Goudhurst
Dickson, L. S. Croydon Coll., S. Croydon
Ellis, D.M. The College, Goudhurst
²Hindle, L. Stalybridge Technical Day S.
Hughes, M. *a.* Arnot St. Higher Grade S., Walton
²Jones, H.M. Preswylfa High S., Cardiff
²Marsh, C.E. Snowdon H., Fulham

GIRLS, 3RD CLASS, PASS—*Continued.*

Phipps, M.A. Pentre Higher Elem. S., Rhondda
²Poppy, I.E. Westbourne S., Paddington
Samuel, M.M. Pentre Higher Elem. S., Rhondda
Scanes, E. *a.* The Conv., Bexley Rd., Erith
Slee, K. Richmond High S., Liscard
Stuart, K.B. Hill Croft S., Bentham
Vallet, L.A. Laton H., Hastings

²Batty, H. Firth Pk. High S., Pitsmoor, Sheffield
Culhane, B. St. Mary's Conv. S., Buttevant
²Ellis, M.F. Avenue Rd. S., W. Hartlepool
Henisse, A. *f.* Marist Conv., Tottenham
²Hunt, C. Redditch Secondary S.
Rogers, M.C. Wincham Hall Coll., Northwich
Whitter, G. Congleton Ladies' Coll.

Barnard-Smith, G, Private tuition
Beale, E. Hill Croft S., Wellingborough
Carruthers, E. Carlisle Higher Grade S.
²Croghan, M.T. TowerH., Melton Mowbray
Douglas, G. Conv. of the Assumption, Richmond
Handley, E.R. *a.* Gosberton Hall Coll., nr. Spalding
Kerr, C.F. Ravenscourt H., Ravenscourt Park, W.
²McDonnell, L. Adelphi H., Salford
Need, A. Saxonholme High S., Whalley Range, Manchester
Vedowe, L. Private tuition

Chatterton, A.C. *e.* Llantwit Major Council S.
²Dunbar, R.A. Longmoor Lane Council S., Liverpool
Francis, F.H. The College, Oswestry
Hartigan, M. St. Mary's Conv., Bruff
Little, M.R. Central Classes, Long Sutton
Waring, K.V. *f.* Stella H., Cathcart Hill, N.

Curtis, E. High S., TheGreen, Twickenham
Davies, N. Stoneleigh Coll., Porthcawl
Field, D. Bow Modern S., Bow Rd., E.
Gait, E.A. *e.* The College, Goudhurst
²Gleeson, E. Notre Dame Coll. S., Leeds
Harkness, M. Girls' Coll. S., Ballymena
Leo, M.K. St. Mary's Conv., Bruff
Locke, M. *s.* Holmwood Coll., Westcliff-on-Sea

Booth, C.D. Granville Coll., Southampton
Bulfin, M.M. Conv. La Sainte Union, Banagher
Clayton, G. Lowther Coll., Lytham
Dundee, J.C. *f.* IntermediateS., Ballyclare
Eastment, F. Porth Higher Grade S.
Fleetwood, E. Arnot St. Higher Grade S., Walton
Gray, W.M. Rhianva Coll., Hunstanton
McLaughlin, K. Heathfield H., Cardiff
O'Callaghan, E. Heathfield H., Cardiff
²O'Neill, K. St. Mary's Conv., Bruff
Ryan, J. St. Mary's Conv. S., Buttevant
Sproull, K.F.F. PrincessGardensS., Belfast
Welstead, M.I. Upper St. Leonards Ladies' Coll.

Alexander, A. Highfield Coll., Blackpool
²Axford, E.M. County S., Westbury
Brackenridge, S.A. Redby Girls' S., Sunderland
Bradshaw, M.S. St. Winifred's High S., Southampton
²Bramwell, M. Rivington & Blackrod Gram. S., nr. Horwich
Cabedo, M. *e.a.sp.* St. Francis Xavier's Conv., Gibraltar
Day, A. Heathleigh S., Horsmonden
²Dunbar, S. Longmoor Lane Council S., Liverpool
Emmett, C. *s.* High S., The Green, Twickenham
Evans, E. Porth Higher Grade S.
Hatton, G. Montpellier S., Cork
Kessen, M.McA. Arnot St. Higher Grade S., Walton
Lawrence, H.E. *a.* Porth Higher Grade S.
²MacFarlane, C.M. High S., WalthamCross
Panes, C. Wembley High S.
Thomas, E.M. Porth Higher Grade S.
Whittome, E. *e.* Ladies' Coll. S., Tavistock

Barnfather, S.A. *a.* Friends' S., Wigton
Birch, M.B. The College, Oswestry
Dennes, C.M. Alresford S., Chislehurst
²Fitzpatrick, E. Adelphi H., Salford
Fletcher, F. *s.* Oxford H., Junction Rd. N.
²Hancock, D. Longmoor Lane Council S., Liverpool
Lloyd, H. Merthyr Tydfil Advanced Elem. Girls' S.
²Moran, K. Notre Dame Coll. S., Leeds
Perrett, A.E. Lynton H., Portsmouth
Pickering, H.J. *a.* Friends' S., Wigton
Porter, K. *e.f.* Bloomfield Coll. S., Belfast
Verbeke, G.S. *f.* The Conv., Bexley Rd., Erith

Adair, M.D. Calder H., Seascale
Fleming, N. St. Mary's High S., Midleton
Gough, F.E. CentralGirls' S., Southampton
²Guy, W. Penzance P.T. Centre
Handscomb, H.M. Boldrewood, Red Hill
Lambert, E. Heathleigh S., Horsmonden
O'Toole, M. Mercy Conv., Birr
Passmore, B. Merthyr Tydfil Advanced Elem. Girls' S.
Sayer, S.G. Winchmore Hill Coll. S.

Cooper, C.M. Wincham Hall Coll., Northwich
Danino, C. *e.* St. Francis Xavier's Conv., Gibraltar
Goldstein, J. Somerset H., Ramsgate
Greenwood, M.L. The College, Goudhurst
Judge, L.J. University S., Rochester
Lemon, M. *e.* Victoria Coll., Belfast
²McPhilips, M. Notre Dame Coll. S., Leeds
²Patterson, D.G. Central Higher Grade S., Actou
Pearce, E.M. Parc Bracket Coll., Camborne
Randall, F. *f.* Manor House Conv., Surbiton
Taylor, R. Arnot St. Higher Grade S., Walton
Wilkinson, F.M. Boldrewood, Red Hill
Williams, S.E. Merthyr Tydfil Advanced Elem. Girls' S.

Dice, E.W. Felix H., Dulwich
Evans, M.A. Merthyr Tydfil Advanced Elem. Girls' S.
Holman, E.P. Sullivan Coll., Southampton
Jackson, N. Rhianva Coll., Hunstanton
Lynes, J. *e.* Firth Pk. High S., Pitsmoor, Sheffield
Procter, H.M. Hillcroft S., Bentham
Skellorn, E. Longmoor Lane Council S., Liverpool
Towle, F.M. Tower H., Melton Mowbray

Barrow, E. *a.* Longmoor Lane Council S., Liverpool
Ellison, E.M. 26 Trinity Rd., Bootle
Griffiths, M. Stoneleigh Coll., Porthcawl
²Jones, E.A. Porth Higher Grade S.
Molloy, A. *a.* Mercy Conv., Birr
²Venning, M.B. Private tuition

Audain, B.M. Melbourne Coll., Thornton Heath
Barker, I. Church Inst., Ilkeston
Condon, L. *e.a.* St. Mary's Conv., Bruff
Cooper, F. Cambridge H., York
Crawley, N.V.N. Central Higher Grade S., Acton
Hallesy, V. Merthyr Tydfil Advanced Elem. Girls' S.
James, G.H. CentralGirls'S., Southampton
Lowe, A. Eskdale S., Timperley
Phillips, B. St. Winifred's High S., Southampton
Whecler, L.A. Brandon H., S. Croydon
Williams, M.A. Porth Higher Grade S.

Bell, D. Wincham Hall Coll., Northwich
Fulton, M. Redby Girls' S., Sunderland
Jones, M.O. Porth Higher Grade S.
Nowell, T.L. Tower H., Melton Mowbray
Pugsley, E. Porth Higher Grade S.
Ramsbottom, P.H. Hill Croft S., Bentham
²Shipley, A. St. John's S., Lichfield
Tait, S.D. ArnotSt.HigherGrade S., Walton
²White, C. Notre Dame Coll. S., Leeds

Atkinson, E. Lowther Coll., Lytham
Bethell, M. Firth Pk. High S., Pitsmoor, Sheffield
Brown, M. *a.* 8 Ashbourne Rd., Aigburth
Cruikshank, W.G. The College, Goudhurst
Fleming, A.H. Longmoor Lane Council S., Liverpool
Fletcher, F.M. Lissadel, West Ealing
Kelley, F.M. Ashlea H., Southend-on-Sea
²Levis, E.E. Montpellier S., Cork
Macey, E. St. John's Coll., Brixton
McClare, E. Granville Coll., Southampton
McCormack, K. St. Mary's Conv., Bruff
Newton, M. Girls'S., Promenade, S.Shore, Blackpool
Reypert, D.L. Middle Class S., Stoke Rd., Gosport
Ryan, N.M. St. Mary's Conv. S., Buttevant
Spain, E.M. BenedictineConv.S., Dumfries

Ballance, R. Clare Lodge S., Newcastle
Derbyshire, Q. Longmoor Lane Council S., Liverpool
Dunn, P. Cranley H., Muswell Hill, N.
Evans, M. Merthyr Tydfil Advanced Elem. Girls' S.
²Flynn, A. Notre Dame Coll. S., Leeds
Harris, M. Porth Higher Grade S.
Knight, G.L. Private tuition
Mathews, D. Princess Gardens S., Belfast
Tivy, E.W. Private tuition
Wainwright, K. 8AshbourneRd., Aigburth

Alford, F. Ladies' Coll. S., Tavistock
Allen, F.M. *e.* Queen's Coll., Wandsworth Common
Evans, E.R. Oxford H., Junction Rd., N.
²Knight, D.M. Buckingham Pl. Acad., Landport, Portsmouth
Massam, A. St. Teresa's, Birkdale, Southport
²Rouston, C. Beighton H., Sheffield
Simons, M.F. St. John's Coll., Brixton
Tanner, C. Gram. S., Bandon
Wilson, A. Friends' S., Wigton

Chappell, M.A. Comm. S., High Rd., Wood Green
Higgins, F. 8 Ashbourne Rd., Aigburth
Owen, M. Gram. & Coll. S., Carnarvon
Williams, A.M. The College, Oswestry

Boucher, M.C. *e.* Conv. of Mercy, Cadogan St., Chelsea
Ells, W. MiddleClass S., StokeRd., Gosport
Evans, H. Porth Higher Grade S.
Slattery, M.A. St. Mary's Conv., Bruff
Walshe, G.M. *s.* Conv. La Sainte Union, Banagher

Andrews, M.E. Colne Valley S., Rickmansworth
Gumbrell, M.K. Middle Class S., Stoke Rd., Gosport
Leyshon, M.M. Porth Higher Grade S.
McEnrey, M.A. St. Mary's Conv., Bruff
Runnalls, E. Highwood H., Liskeard
Simpson, D.M. TheConv., BexleyRd., Erith
²Tomes, B.A. CentralHigherGradeS., Acton

Bailey, G.E. Clark's College S., Brixton Hill, S.W.
Carter, M.I. Feltham High S.
²Connolly, M. St. Mary's Conv., Newlands, Middlesbro'
Hall, D.M. Friends' S., Wigton
Ugalde, P. 8 Ashbourne Rd., Aigburth

Bird, E.M. Pentre Higher Elem. S., Rhondda
Charles, M. Pentre Higher Elem. S., Rhondda
Gardner, M. 13 Stranmillis Rd., Belfast
Morgan, S.E. The Conv., Bexley Rd., Erith
O'Shea, M.B. St. Mary's High S., Midleton
Graham, M.L. Bank House, Comber

LOWER FORMS EXAMINATION.—PASS LIST, MIDSUMMER, 1907.

BOYS.

Abell, R.W. Market Bosworth Gram. S.
Adam, T.W. Gordon House, Broadstairs
Agius, R.V.J.R. St. Mary's Lodge, St. Leonards-on-Sea
Alberti, J. Catholic Coll. Inst., Manchester
Allcock, T. St. Catherine's S., Sheffield
Anderson, R.L. St. John's Coll., Brixton
Artesani, J. Christian Bros.' Coll., Gibraltar
Ashby, A.S. Gram. S., Taplow
Attrill, C.E. Margate College
Aulton, W.S. Gram. S., Belper
Autram, H.J.H. Lancaster Coll., W. Norwood
Averino, C. St. Aloysius' Coll., Hornsey
Ayres, W. StokePublicHigherS., Devonport
Bacon, D. Catholic Coll. Inst., Manchester
Bailey, E.T. Clapham Gram. S.
Baird, T.J. St. George's Coll., Weybridge
Baker, H.T. Margate College
Baldwin, S.J.W. Lindisfarne Coll., Westcliff-on-Sea
Balfrè, A, A. St. Aloysius' Coll., Hornsey
Ball, S.E. High S. and Comm. Coll., Forest Gate
Barclay, C.N. Belton H., Broadstairs
Barker, W.P. Scorton Gram. S.
Barnes, A. Christian Bros.' Coll., Gibraltar
Barnes, H. Gram. S., Streatham
Barniecott, H. Xaverian Coll., Mayfield
Bartlett, W.G. Wadham S., Liskeard
Batchelor, C.E.R. Osborne High S., W. Hartlepool
Bath, A.E. Margate College
Baton, P. Marist Bros.' Coll., Grove Ferry
Beaver, L. Margate College
Bendle, M.S. Willesden Prep. S., Harlesden
Benians, E.A.F. Bethany H., Goudhurst
Bennett, H.H. Bethany H., Goudhurst
Berretta-Moreno, S. St. Aloysius' Coll., Hornsey
Bertin, F. Catholic Coll. Inst., Manchester
Best, F.J. Modern S., E. Grinstead
Bettle, H.W. Osborne High S., W. Hartlepool
Binchy, O. Conv. La Sainte Union, Banagher
Bindon, H.D.V. Stafford Coll., Forest Hill
Bindon, W.S. Stafford Coll., Forest Hill
Bishop, V.A. St. George's Coll., Weybridge
Blackwood, J. Margate College
Blanchet, M.J. Margate College
Bradshaw, S.B. Orient Coll., Skegness
Briggs, F.H. St. Winifred's S., Torquay
Brooks, G.W. Stoke Public Higher S., Devonport
Buckeridge, H.W. Margate College
BudgeK.B.C. Stoke Public Higher S., Devonport
Burnell, E.T. St. Winifred's S., Torquay
Burt, L.G. Margate College
Butcher, F. Johnston Terrace Boys' S., Devonport
Butter, N.C. Gram. S., Taplow
Byrne, J. Catholic Coll. Inst., Manchester
Callow, H.E. Tudor Hall, Hawkhurst
Callund, F. Milton Lodge S., Fleetwood
Cardona, H. Christian Bros.' Coll., Gibraltar
Carter, A.A. Margate College
Carter, S. St. Dominic's S., Bognor
Casola, L. Christian Bros.' Coll., Gibraltar
Catling, H.S. Winchmore Hill High S.
Cazaly, E.J. Gram. S., Taplow
Cazaly, H.P.A. Gram. S., Taplow
Chadd, P. Xaverian Coll., Mayfield
Chalmers, J. Salesian S., Farnboro'
Champenois, J. Marist Bros.' Coll., Grove Ferry
Chardin, R. Marist Bros.' Coll., Grove Ferry
Chase, H. Gordon H., Broadstairs
Chiappa, A.L. St. Aloysius' Coll., Hornsey
Clapp, R.T. High S. and Comm. Coll., Forest Gate
Clark, T.J. St.George'sPrep.S., Southampton
Claydon, S.H. Lindisfarne Coll., Westcliff-on-Sea
Cleaver, C.L. St. Catherine's Coll., Richmond
Clifton, R.P. Tudor Hall, Hawkhurst
Cockell, C. University S., Rochester
Cole, T.M.W. Clapham Gram. S.
Colebrook, L. Gram. S., Streatham
Coll, P. Christian Bros.' Coll., Gibraltar
Collings, F. Gram. S., Taplow
Collins, F. Gram. S., Taplow
Colwill, C.J. Stoke Public Higher S., Devonport
Conn, W.H. Ulster Provincial S., Lisburn
Cope, B.A. St. Aloysius Coll., Hornsey
Cooksley, C.E. The College, Weston-super-Mare
Cooper, J.A. Salesian Day S., Wandsworth Common
Cooper, R. Kent House Coll., Anerley
Cooper, W.H.J. St. Aloysius' Coll., Hornsey
Conrad, G.A. St. Aloysius' Coll., Hornsey
Corke, L.M. University S., Rochester
Coventry, St.J. St. Dominic's S., Bognor
Crawley, G. Xaverian Coll., Mayfield
Creixell, J. Marist Bros.' Coll., Grove Ferry
Cross, J.W.H. Stoke Public Higher S., Devonport
Croucher, J. Xaverian Coll., Mayfield
Cruset, E. Marist Bros.' Coll., Grove Ferry
Cullen, W.H.P. Huish Gram. S., Taunton
Curtis, R.L. Gram. S., Dawlish
Dallas, C.B. Clapham Gram. S.
Darnill, A.T.G. Margate College
Darnley, C. Xaverian Coll., Mayfield
Davies, D.L. Holly Bank S., Frodsham
Dawe, J.M.W. Hoe Gram. S., Plymouth
Dawes, S.B. Stoke Public Higher S., Devonport

BOYS, LOWER FORMS—*Continued.*

de Mones Cazon, C.J. St. Aloysius' Coll., Hornsey
Dempsey, M. Salesian S., Battersea
Dennis, R.C. Barton S., Wisbech
Depasse, R. Salesian S., Battersea
de Sá Teixeira Peixoto, A.J. St. George's Coll., Weybridge
Devany, P. Catholic Coll. Inst., Manchester
Dickinson, L. St. C. Grove H., Highgate
Diesch, F.B. St. Aloysius' Coll., Hornsey
Dingle, A.T. Wadham S., Liskeard
Docker, H.G. St. Mary's Hall, Cardiff
Donegan, G. Xaverian Coll., Mayfield
Donkin, A. Salesian S., Farnboro'
Donovan, C.A.J. St. Aloysius' Coll., Hornsey
Dotto, L. Christian Bros.' Coll., Gibraltar
Dowling, F. Salesian S., Battersea
Dowling, W. Conv. La Sainte Union, Banagher
Drew, E.J. Salesian S., Farnboro'
Dubonnet, M. Marist Bros.' Coll., Grove Ferry
Dunne, A. Xaverian Coll., Mayfield
Durrant, V. Xaverian Coll., Mayfield
Duverger, R. Marist Bros'. Coll., Grove Ferry
Eagles, L.E. Lindisfarne Coll., Westcliff-on-Sea
Edwards, W. Xaverian Coll., Mayfield
Edwards, W.I. Holt H., Cheshunt
Elgey, A. Argyle H., Sunderland
Eltringham, R.W. Scorton Gram. S.
Erl, E. Xaverian Coll., Mayfield
Evans, F.T.P Gram. S., Taplow
Evens, H. Gram. S., Southend-on-Sea
Farmer, E.C.J. St. Aloysius' Coll., Hornsey
Fenn, H.T. Hillmartin Coll., Busby Place, N.W.
Fiat, M.S. St. Aloysius' Coll., Hornsey
Figgins, E.E. Clapham Gram. S.
Fincham, C.F. Tudor Hall, Hawkhurst
Finney, J.L. Belton H., Broadstairs
Flanagan, G.A. Cambridge H., Camden Rd., N.
Fletcher, R.M. Lindisfarne Coll., Westcliff-on-Sea
Flowerdew, E.S. Eastward Ho! Coll., Felixstowe
Foden, A. Kent House Coll., Anerley
Fogarty, L. Conv. La Sainte Union, Banagher
Ford, H.J. Gram. S., Belper
Foster, W.L. Stafford Coll., Forest Hill
Frampton, P.L. Eversley S., Southwold
Frankling, H. Wembley High S.
Fraser, J. Vernon H., Hr. Broughton
Friend, M. Stafford Coll., Forest Hill
Furniss, E. Xaverian Coll., Mayfield
Gache, G. Christian Bros.' Coll., Gibraltar
Garcia, J. Christian Bros.' Coll., Gibraltar
George, H. Xaverian Coll., Mayfield
George, V. Stoke Public Higher S., Devonport
Gilbert, A. Holt H., Cheshunt
Gillett, E.M. Winchmore Hill High S.
Girling, I. LeM. Eversley S., Southwold
Glock, W.W.F. Stafford Coll., Forest Hill
Glynn, A.G. St. George's Coll., Weybridge
Golding, E.E. St. Aloysius' Coll., Hornsey
Gomez, J. Christian Bros.' Coll., Gibraltar
Goodchild, G.G. Margate College
Goodridge, H. Gram. S., Dawlish
Gould, V.G. Stafford Coll., Forest Hill
Grammel, W. Xaverian Coll., Mayfield
Gray, P.A. Tutorial S., Penarth
Grayson, K.J. Holt H., Cheshunt
Greenwood, M. Scorton Gram. S.
Griffin, W.A. Gram. S., Taplow
Grosfils, A.W. St. Aloysius' Coll., Hornsey
Gubbins, E.J. St. Aloysius' Coll., Hornsey
Hall, H.P. Osborne High S., W. Hartlepool
Hallett, F. Huish Gram. S., Taunton
Ham, E.M. All Saints' Choir S., Clifton
Hamilton, L.G. Holt H., Cheshunt
Hancock, N.G.W. Margate College
Hannen, L.C.D. Private tuition
Hargreaves, P.W. Holt H., Cheshunt
Harker, R. Xaverian Coll., Mayfield
Haslegrave, C.F.P. Eversley S., Southwold
Hathaway, H.M. Stafford Coll., Forest Hill
Healy, J.P. Kensey, Launceston
Henderson, E. Hoe Gram. S., Plymouth
Hennessy, C.J. St. George's Coll., Weybridge
Herbert, R. Gram. S., Streatham
Herrod, B.J. Market Bosworth Gram. S.
Hill, A.G. Lindisfarne Coll., Westcliff-on-Sea
Hill, E.F.F. Stoke Public Higher S., Devonport
Hill, S.F. Ulster Provincial S., Lisburn
Hill, S.L. St. John's Coll., Brixton
Hines, E. Margate College
Hoare, J.M. Hillmartin Coll., Busby Place, N.W.
Hocken, W.E. Gram. S., Taplow
Holden, H.W.S. Eversley S., Southwold
Homsy, R.A. St. George's Prep. S., Southampton
Horden, W.F. Richmond H., Handsworth
Horne, H. The College, Weston-super-Mare
Howlett, G.J. Salesian S., Farnboro'
Hudson, P.C.W. Gram. S., Taplow
Hughes, W. Glenlola, Bangor
Hughes, W.H. Lindisfarne Coll., Westcliff-on-Sea
Hunter, L.M. Margate College
Huntley, A.C. The College, Weston-super-Mare
Inge, R.M.P. Belmont H., Walmer
Jennings, R.J. Tankerton Coll., Tankerton-on-Sea
Jessop, F. Xaverian Coll., Mayfield
Johns, H. Hoe Gram. S., Plymouth
Johnston-Lavis, W.A. St. Mary's Lodge, St. Leonards-on-Sea
Jones, H.W. Winchmore Hill Coll. S.
Jones, R.G. Gram. S., Taplow
Jones, R.H. Margate College
Jurd, M.E. Clapham Gram. S.
Kemball, N. Grenville S., Guildford
Kendal, B. Salesian S., Battersea
Kidd, F.S. Stafford Coll., Forest Hill
King, G.S. Lindisfarne Coll., Westcliff-on-Sea
King, H.V.W. St. Mary's Hall, Cardiff
King, R. Gram. S., Streatham
Knapman, J. St. Winifred's S., Torquay
Knight, F.W. Stoke Public Higher S., Devonport
Knowles, J.W. Barton S., Wisbech
Knowles, R.C. Eversley S., Southwold
Lasham, T.A. Grove H., Highgate
Latham, F.H. Private tuition
Lavoye, A. Marist Bros.' Coll., Grove Ferry
Lavoye, P. Marist Bros.' Coll., Grove Ferry
Lawrence, E.W. Holt H., Cheshunt
Lazano, F. Marist Bros.' Coll., Grove Ferry
Leapman, S. Margate College
Le Blond, B.H. Holt H., Cheshunt
Lefranc, H. Marist Bros.' Coll., Grove Ferry
Lester, R.M. Willesden Prep. S., Harlesden
Levay, H.N. Hillmartin Coll., Busby Place, N.W.
Levy, R.A. Lindisfarne Coll., Westcliff-on-Sea
Lewarne, S. Stoke Public Higher S., Devonport
Lindeman, G.N. Beverley S., Barnes
Lindsey, S.C. Margate College
Lishman, W. Battle Hill S., Hexham
Logan, C.D. Clapham Gram. S.
Lowry, J. Bloomfield Coll. S., Belfast
Mace, A. Gram. S., Taplow
Maddock, A.G. Johnston Terrace Boys' S., Devonport
Maginnis, H.S. Ulster Provincial S., Lisburn
Malzer, G. St. Aloysius' Coll., Hornsey
Manicom, H.C.B. University S., Rochester
Manning, A.H.W. Grove H., Highgate
Marchant, E. Salesian S., Battersea
Marks, W. Stoke Public Higher S., Devonport
Marshall, L. Vernon H., Hr. Broughton
Marshall, W.H. Margate College
Martin, G. Marist Bros.' Coll., Grove Ferry
Martin, L. Catholic Coll. Inst., Manchester
Mason, H.G. Margate College
May, C.C. Catford Coll. S., Lewisham
May, V. Kent House Coll., Anerley
McAlindon, J. Salesian S., Farnboro'
McBride, V. Catholic Coll. Inst., Manchester
McCammon, J.H. Ulster Provincial S., Lisburn
McConchie, J. Gram. S., Streatham
McDermott, F. High S. and Comm. Coll., Forest Gate
McHale, T.F. St. Aloysius' Coll., Hornsey
McKeever, G.N. St. George's Coll., Weybridge
McManus, J. Salesian S., Battersea
Mears, J.K. Margate College
Mears, T.P. Margate College
Mera, E.W. High S. and Comm. Coll., Forest Gate
Meugens, J. Huish Gram S., Taunton
Mille, G. Marist Bros.' Coll., Grove Ferry
Millett, F.E. Stoke Public Higher S., Devonport
Milnes, G.H.C. Belton H., Broadstairs
Mitton, T.E. Wintersloe, Moseley
Mizen, H. Gram. S., Streatham
Morcom, F.C. Wadham S., Liskeard
Morellini, L. Salesian S., Battersea
Morgan, J.T. Lady Hawkins' Gram. S., Kington
Morley, C.H. St. John's Coll., Brixton
Morris, C. Kent House Coll., Anerley
Morris, E.W. Lady Hawkins' Gram. S., Kington
Moylan, F.E. St. Aloysius' Coll., Hornsey
Muldary, C. Xaverian Coll., Mayfield
Mullin, J.C. St. George's Coll., Weybridge
Mulready, C.H. Stoke Public Higher S., Devonport
Myers, D.H. Margate College
Nash, L.C. Comm. S., High Rd., Wood Green
Naylor, N. Orient Coll., Skegness
Neary, H. Conv. La Sainte Union, Banagher
Nicholson, G.H. Private tuition
Nickson, P. Norbreck High S.
Norman, R.D. St. George's Coll., Weybridge
Norris, E.W. University S., Rochester
Nunneley, W.B. Modern S., E. Grinstead
O'Connell, C. Xaverian Coll., Mayfield
O'Connor, M. Conv. La Sainte Union, Banagher
O'Connor, T.J. Catholic High S., Grove Rd., Southsea
O'Dwyer, J. Salesian S., Battersea
Olford, S.E. Stoke Public Higher S., Devonport
Organ, W.J. Johnston Terrace Boys' S., Devonport
Osmond, L. Xaverian Coll., Mayfield
Owen, L. Gordon House, Broadstairs
Padmore, H.F. Lady Hawkins' Gram. S., Kington
Page, L.L. Margate College
Palmer, A. Hillmartin Coll., Busby Place, N.W.
Palmer, J.B. Wintersloe, Moseley
Panter, A.H. Stoke Public Higher S., Devonport
Parker, H.T. Private tuition
Parker, S.W. Wintersloe, Moseley
Parkhouse, R. Lady Hawkins' Gram. S., Kington
Patris de Breuil, M. Marist Bros.' Coll., Grove Ferry
Patron, J. Christian Bros.' Coll., Gibraltar
Pearce, C.L.W. Margate College
Pengelly, R.N. Stoke Public Higher S., Devonport
Pennell, E. Gram. S., Taplow
Percy, C.W.H. Margate College
Perez, J.M. St. George's Coll., Weybridge
Perez, J. Christian Bros.' Coll., Gibraltar
Perez, M. Christian Bros.' Coll., Gibraltar
Perrot, M. Marist Bros.' Coll., Grove Ferry
Peter, J. Hoe Gram. S., Plymouth
Peter, T. Marist Bros.' Coll., Grove Ferry
Petty, H.G. Gram. S., Taplow
Pocock W. Kent House Coll., Anerley
Potter, C.T. Stoke Public Higher S., Devonport
Powell, W. Salesian S., Battersea
Price, S.V. Holt H., Cheshunt
Pullen, W.J. Lindisfarne Coll., Westcliff-on-Sea
Rae, A.I. Holt H., Cheshunt
Rait, C. Xaverian Coll., Mayfield
Recaño, H. Christian Bros.' Coll., Gibraltar
Redfern, C.J. High S. and Comm. Coll., Forest Gate
Reed, J.C. Stoke Public Higher S., Devonport
Reihill, F.A. St. Aloysius' Coll., Hornsey
Rendle, C.H.R. Tothill S., Plymouth
Reynolds, F. Xaverian Coll., Mayfield
Reynolds, H.J.S. Margate College
Roberts, C.R. Hillmartin Coll., Busby Place, N.W.
Roberts, N.G. Grove H., Highgate
Rocca, J. Christian Bros.' Coll., Gibraltar
Rodber, C.F. Scorton Gram. S.
Rogerson, W. Margate College
Rolph, A. Wembley High S.
Rose, R. Gram. S., Southend-on-Sea
Rose, R.A. Belmont H., Walmer
Roser, E.D. St. Aloysius' Coll., Hornsey
Ross, N. Kent House Coll., Anerley
Ross, R.S. Holt H., Cheshunt
Rosset, G. Xaverian Coll., Mayfield
Rossiter, G. Walsall Comm. Coll.
Rowden, E.P. Oxford Coll., Waterloo, L'pool
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Scientific Orientation.

WHETHER or not Education be properly admissible to the circle of the sciences, it is plain enough that the successful treatment of educational problems can proceed only upon scientific methods; and Sir Philip Magnus did conspicuous service by devoting his presidential address in the Education Section of the British Association to the enforcement and illustration of this fundamental principle of sure progress. Elsewhere we print the address in full. The specific proposals directly affect only the primary grade, and we should have been glad to hear of some hopeful remedy for the "chaotic" state of the secondary grade; but still the primary grade is the basis of the whole erection, and it is probably the subject of as much dissatisfaction as any other part of the system.

The first step, of course, is to grasp the facts. We know, or at any rate we have the means of knowing, many of the facts; but apparently we do not know enough. Speaking from the presidential chair at York last year, Prof. Sadler said this: "I feel that we know very little about what is going on in England itself. Is it not much to be desired that we should have publicly on record a real description of what is going on in English education in all grades at the present time?" Sir Philip Magnus recognized "the mass of valuable information on all sorts of educational questions" that we have acquired of late years both at home and from abroad, but he pointed out that much of it "is still awaiting the hand of the scientific worker to be properly co-ordinated and arranged." Till such a collation is accomplished, the facts, though lying on our table, cannot be fruitfully utilised. "And unfortunately," as Sir Philip remorselessly put it, "we in this country are too apt to rest content when we have provided the necessary machinery for the acquisition of such facts without taking the necessary steps to compare, to coordinate, and to arrange them on some scientific principle for future use." When the process is left to the enthusiasm of private individuals in their spare hours, the results are inevitably long delayed, and, even if they ever see the light, they are still longer in obtaining official recognition in practice. We have already spoken of the need for a Statesman specially charged with this business and reasonably free to give his mind and energies to its assiduous performance.

The facts collated and adequately grasped, the next step is experiment. "It is essential," says Sir Philip, "that we should be able to test and supplement the conclusions based on such knowledge, whenever it is possible, by direct experiments applicable to the matter under investigation." He points to the Brussels model school, to the educational experiments in Sweden reported by Mr. Thornton, to London experiments in manual training and in elementary science subjects; and, it is to be noted, he confirms, what we have so often insisted on, that "as a general rule it is only by the effort of private individuals or associations that changes in system are effected and teachers are enabled to escape from the old grooves on to new lines of educational thought and practice." But experiments give trustworthy results only when they are conducted with competent knowledge of facts, including the history of work upon the subject in hand and due regard to the immediate conditions. An imperfect acquaintance with the history of education too often leads to the resuscitation of methods already tried and condemned; and historical instinct and training are necessary to discern whether even the excellent practices of past generations are still valid in modern circumstances. And there is always an extreme difficulty in "breaking away from ancient modes of thought."

Granting, then, the necessity or the desirability of more facts and of continued experiment, yet we cannot put off indefinitely the commencement of reforms. It is futile to wait for the evolution of a system that shall be perfect and final: it is enough to do our best within the horizon of our own day and generation. And, after all, there are principles that seem to be adequately trustworthy as grounds of positive action—principles that in recent years have led to innovation on a very extensive scale in many departments of study and in all the grades of schools. Such a principle, on the face of it, appears to be the basis of the main suggestion of Sir Philip's address. The child must be considered educationally in relation to his environment; and his education should develop through utilization of the circumstances of his natural surroundings. In the days when school instruction was primitive or non-existent, "boys and girls acquired knowledge by personal experience in the field, in the work-

shop, and in their own homes"—the knowledge most useful to them in daily life, and a very real education. Now Sir Philip tells us that "these three objects—the Field, the Workshop, and the Home—should be the pivots on which the scheme of instruction should be fixed, the central thoughts determining the character of the teaching to be given in rural and urban schools for boys and girls." He explicitly demands a new orientation of our attitude towards primary education. Yet he is "not suggesting any narrow or restricted curriculum," but believes that, "by widening the child's outlook, by closely associating school work with familiar objects, you will accelerate his mental development and quicken his power of acquiring knowledge"; and he is careful to require coordination of the primary and secondary stages.

Clearly we must "evolve our teaching from the things with which the child is already familiar," and, where possible, from the things "in which he is likely to find his life work." But here we need more facts. How far is all this being done to-day? Country children grow into lads that flock into towns. We have no professional and industrial castes. If we can foresee the career of half the children, how shall we coordinate the teaching of the other half with theirs? And how develop the primary into the secondary pupil? Moreover, how far can we rely upon the complaints of "our merchants and manufacturers and employers of labour, our teachers in secondary and technical schools," that under the present system "the children have gained very little useful knowledge and still less power of applying it"? Frankly, we have profound misgivings as to the soundness of such a judgment. Will Sir Philip now work out his scheme in broad detail? It is manifestly worthy of careful and patient investigation.

NOTES.

We all know in a general way that the work of education throughout the country is a tolerably extensive and busy industry. If a stimulus to the imagination were necessary, it would be supplied by a review of the hundreds of newspapers that are diligently chronicling the thousands of reports and prize distributions at all sorts of schools and colleges up and down the land. Then one would be enabled to realize with more definiteness the concrete details of the enormous forces, intellectual and material, that are brought to bear upon the school moulding of the rising generation. With an adequate allowance of salt, still it cannot be doubted that the reports justly represent a steady and considerable advance in educational work and in educational interest; and the vast number of substantial scholarships and prizes indicate not only momentary encouragement but also the opening up of further avenues to higher and more prolonged courses of study. To present the substance of only the more important of these annual accounts, to say nothing of the words of wisdom of the speech-day addresses, would require half a dozen of our monthly issues: we must content ourselves with a mere suggestion of a general impression.

The Conference at the Workers' Educational Association, which was started at Oxford four years ago, and met at Oxford again last month in connexion with the University Extension Summer Meeting, represented 210 organizations, the majority of them working-class, Trade Unions, and Trade Councils, the number of delegates being 430. The assemblage was imposing enough to evoke letters of sympathy from the Chancellor and the Vice-Chancellor, which were specially appropriate if, as the Bishop of Birmingham argued, the great function of the universities is to educate the governing classes, and the governing classes are "those that are represented in this organization." Mr. Keir Hardie and the House of Lords will be interested in this aspect of things. Sir Robert Morant expressed the keen interest of the Board of Education in the movement and their readiness to help it in every possible way, if the Association would only give them guidance by "showing them the way in which that particular kind of work can be furthered." Here is teachableness. So a Committee was formed—seven nominated by the Vice-Chancellor and seven nominated by the Executive of the Association (an engaging equality)—with instructions to report before Easter next as to the best means of carrying out the desired union of labour and learning in the University. The practical difficulties are indeed great, but they will no doubt be overcome in the good cause. The University is willing, workers are willing, and there is money (in reason) to be had for the asking—judicious asking.

The Association, we understand, confines its efforts to repairing defects in the education of men that are actually at work in manual occupations, and that probably intend to remain at manual work. As Bishop Gore said, if men are to fulfil their part as citizens, if they are to take the part they as citizens ought to be taking in governing and improving the condition of their country, "they want knowledge, special knowledge, economic knowledge"; and the word "economic" in this connexion should bear its very fullest meaning. On the point of method, the Workers are thoroughly right in bargaining for less lecturing and more teaching, for smaller classes, and for continuous study. Between the Extension system and the abundance of excellent manuals and other literature on economic subjects in the widest sense, it seems difficult to understand why any studious worker cannot readily inform himself up to the standard of intelligent civism without a term of study at Oxford or any other university. The advantage of a sojourn for a time at Oxford appears to lie in having a period of special application to study without the distraction and the fatigue that accompany daily labour, and perhaps also in the society and in the associations of a venerable home of learning. Undoubtedly it is a laudable thing to enable as many as possible of the thoughtful workers to expand their mental horizon in this way. When all is done that can reasonably be expected to accommodate the aspiration to study and the necessity to toil, all too much will still remain undone, even when all other seats of learning offer the same encouragement as is proposed at Oxford. The movement suggests whether some anticipation of the workers' needs may not be found in developments of school teaching in matters that come home to workers' businesses and bosoms, and whether the old universities should not be reorganized on lines no

less popular than those of the other universities throughout the world.

THE discussion of tuberculosis in Section VII. of the Hygiene Congress brought to light an interesting difference between English and French statistics, which should lead to more particular inquiry. The official summary of a paper by Mr. William Oldright, M.A., states:

An excessive death rate from tuberculosis among teachers is shown by mortality returns. Among teachers, especially females, the proportions of deaths from tuberculosis to deaths from all causes is excessive. In some of the tables it is greater proportionately than in any other women's occupation, and as great as that of printers and stonecutters. Causes suggested the excessive vitiation of school air from respiration and defective ventilation . . . also, perhaps, chalk-dust.

Mr. Oldright apparently refers to teachers in English schools. Now, compare the statement of Dr. Louis Gourichon, Ancien Président de la Société des Médecine-inspecteurs des Ecoles, Paris:

A Paris et dans [le Département de] la Seine la tuberculose est relativement rare chez les maîtres et maîtresses de l'enseignement primaire. Quand elle se développe chez eux, elle prend toujours naissance, sauf des cas exceptionnels, en dehors de l'école. Elle n'est pas une maladie professionnelle.

If we may assume that both authorities are right in their statistics, it would seem to be important to find out the cause or causes of the difference. By the way, the futility of non-professional inquiry is strongly illustrated, if illustration were necessary, in "returns of 58,934 children" in West London "who were supposed by their teachers or parents to be suffering from tuberculosis." "These returns," reports Dr. Squire, "were found to be quite unreliable." And, when the doctors did take the matter up themselves in two schools (1670 children), such tuberculosis as they discovered had been "quite unsuspected in most cases."

WRITING in the *British Friend* for August, Mr. Percy Alden, M.P., points out "that in Germany the land owner and the land speculator, so far from having the city in their grip, are largely subservient to the communal interest and control," and that in Frankfort there is a special law that "enables the City fathers to expropriate, practically without compensation, owners of insanitary property," so that "Frankfort has no slums," but "is a city of open spaces, wide streets, and splendid boulevards." The connexion of this with the conditions of the children is not remote; but the school takes further precautions of its own:

Every new school is equipped with hot douche baths, and boys and girls are required, as a part of their curriculum, to take these hot cleansing baths two or three times a week. The result is that the parents themselves become much more careful about not only the cleanliness, but also the clothing, of their children, and the effect is seen in the large proportion of the working classes who are clean, healthy, and sober.

Moreover, "the school doctor and the school dentist are becoming established institutions": "medical inspection has for years been carried on in thousands of German schools," the large cities having a very complete system; and "great stress is being laid by Commissions and Committees upon the necessity of caring for the teeth of school children."

It is even possible to send the children for treatment long before they are of school age, and in the dental surgery of the town (*Schulzahnklinik*) can be found a map of the mouth of every child with defective teeth, such teeth being marked in red ink. I was amazed to hear that in 1906 there were 21,878 operations; that 4,000 children of all ages were carefully examined; that only 104, or 2·4 per cent., had sound teeth; and I could not help asking myself the question whether a similar state of things would not be found to exist in any large English town.

Of course, it would. Mr. Alden says nothing about ears and throats or eyes, but these are not less important educationally than teeth—especially ears and throats, where ailments are not so obvious to the layman as in eyes or teeth, though very common and very detrimental alike to health and to education.

THE green star is in the ascendant. Vivu Zamenhof! Cambridge has risen to the occasion—"the Vice-Chancellor, flanked by his Esquire Bedells with their silver maces," frankly embracing the most modern of linguistic developments and refuting at a stroke all suggestions of mediæval backwardation. The venerable Prof. Mayor, after a few days' study, addressed the Congress in unimpeachable Esperanto—a proof, if proof were needed, that the language is simplicity itself. It should now at least be plain enough that Esperanto is practical and supplementary, an efficient means of intercourse between people of different tongues, without the remotest notion of ousting the natural languages. Naturally, then, it has shown itself "an important scheme for promoting brotherliness between the races." Dr. Zamenhof himself laid special stress on this point. "Long live Esperanto!" he exclaimed; "but," he added, "above all things, long live the object and soul of Esperantism—long live the fraternity of the nations!" Mr. Blaikie testifies in another column to the educational value of the newest international language. Whether Esperanto is to triumph permanently or to go the way of its long line of predecessors is a question of the future. Meantime it displays, at its majority, an unquestionable vitality. With all respect to Dr. Zamenhof and his distinguished followers, the most striking practical testimony to Esperanto at the Cambridge meeting was Sergeant Gates, of the local police force, who laid down the law to all the nationalities indiscriminately with natural fluency and without possibility of misunderstanding. Sergeant Gates deserves the earliest promotion to the Order of the Green Star.

THE Board of Education has issued a Memorandum to Training Colleges explaining how the new regulations as to the admission of students should be enforced. The regulation which forbids the exclusion of a student from a training college on account of religious faith or social antecedents is to be strictly enforced, but, outside this, college authorities may give preference to students within reasonable lines. For instance, a training college may give preference to students within a specified area, though they may not have a prior place on the list of applicants either in time or attainments. Again, if colleges have in the past discriminated between applicants for admission, they can continue to make their selection on the same principles, provided they comply with the general administrative rules, and do not make the distinction on religious or social grounds. Training colleges connected with the universities may give a preference to candidates with suitable scholastic attainments. Where the head of a college insists on an interview with an applicant for admission, any expenses incurred must be paid by the college, and the interview must have nothing to do with religious belief, nor must there be an examination, either written or oral. To prevent colleges from being inconvenienced by candidates applying for admission to several colleges at once, a fee of 10s. may be charged for registration, to go towards the tuition fee in case of admission, and to be returned in case of rejection.

SUMMARY OF THE MONTH.

The Education Section of the British Association at Leicester discussed many important educational problems with much earnestness. Elsewhere we print a full report of the Presidential Address, by Sir Philip Magnus, and offer some comment upon it. We also give summaries of one or two of the papers on special subjects, reserving others till another occasion—in particular, interesting discussions of the question of scholarships.

The Second International Congress on School Hygiene receives special, though all too brief, notice in another column.

At its closing meeting the Committee of the Hygiene Congress decided that it would probably lead to greater progress if, instead of there being established a Bureau, with a permanent staff, &c., in some central but neutral spot, each country had its own centre for the collection of statistics, &c., and for the diffusion of knowledge. Further, the Committee has formed a small representative Council to supervise in scientific matters and generally to do all that is possible to forward the human interests bound up in the special lines of knowledge included in school hygiene. Certain matters, for instance, will almost at once come under the consideration of this Council:

The question of how medical inspection of schools can best be carried out with the maximum of efficiency and minimum of cost;

The question of how far the laws of health can best be imparted to the coming generation, so that later they will know how to care for themselves and those dependent on them;

The best systems or methods of physical training for both sexes at various ages; and

The feeding of children requiring proper nutrition, so that it shall be done without developing pauperism and with regard to those upon whom the cost falls.

These four matters are being dealt with practically in a great variety of ways, and the Council should be able to collect and analyse known facts to show which methods are best for any town or State.

The Oxford University Extension Summer Meeting was attended by more than 1,000 students, including many from foreign countries. Public Authorities in different parts of the kingdom sent more scholars than hitherto, and labour associations were well represented.

The President of the Association of Berlin Merchants and Manufacturers, on behalf of that Corporation and of the Central Committee of the various associations of merchants, and of men engaged in industry and manufacture existing in Berlin, and of sixty-six associations of special branches of trade and industry, have presented a petition to the Prussian Minister of Education to make the study of English obligatory in all the higher public schools of the country. "England's predominant position in the world," the petition states, "is manifest; similarly, it is manifestly a necessity that we should deduce the consequences therefrom which are necessary to enable us to compete with her with any chance of success. Consequently, the principal weapon for this purpose is a knowledge of the English language."

An interesting pronouncement as to the future of secondary schools was made by Mr. Lough, the Parliamentary Secretary of the Board of Education, at the prize distribution at Bishop's Stortford College.

He did not think that there was anything harassing or unfair in the new conditions. They only embodied three principles—that higher schools and secondary schools must become a definite part of the educational system, and the old notion that the education of the child might be regarded as complete in its twelfth or fourteenth year must be got rid of for ever; that poverty must not be a bar to the entrance of any clever child into a school supported by the nation; and that, if the people paid, they must have a definite amount of control of the schools. The owners of fine school buildings thought it very hard that the public should demand this share in the control of the institution, but he would reply: "What if you did put up the building? What is the good of it if you cannot maintain it?" The denominations were entitled to a great deal of credit for the great work they had done in connexion with education; yet the State also deserved some recognition for the bounteous way in which she was willing to deal with these schools in future. He did not believe that the new Regulations would hurt any secondary school. The Board of Education did not desire to interfere with the liberty of any school or parent where the school was supported privately, but when the State was asked for aid then the conditions must be considered by the State.

Replying to a vote of thanks, Mr. Lough said that from this year forward a great deal more attention was going to be paid to physical education in this country. Medical inspection would be made compulsory in the common schools, and he thought that the provision of playgrounds would be made compulsory. Schools would be encouraged to find further playing centres out of school hours and during holidays.

Sir William Anson, M.P., ex-Parliamentary Secretary of the Board of Education, speaking at the prize distribution at Darlington Grammar School, said that, if he were asked what a secondary school should produce, he would say that no boy should leave a secondary school without some knowledge of the rudiments of at least one branch of science, and, what was more important, some knowledge of scientific method, without some knowledge of the history and literature of his own country, and without some knowledge, preferably of another language besides his own, but certainly of his own language. When he was called to take part in the administration of the work of the Board of Education in 1902 there were complaints from all quarters that boys and girls were so imperfectly acquainted with their own language that they could not put into decent language the things that they had been taught, and which presumably they knew. This arose from the fact that such large grants were given for scientific teaching as turned the whole course of education in that direction and upset the balance. Science had been terribly neglected, but the pendulum had swung too far in the direction of science today. He had read the new Regulations with great interest, and, he confessed, in a somewhat critical spirit. He was not now going to criticize them, but he noticed one feature of risk. The higher grant was dependent upon a large percentage of places being reserved in the secondary school for boys and girls from elementary schools. He earnestly desired every facility to be given, but it was not the case that any child from any elementary school could profit by the education given in any secondary school. There must be some adjustment between the work of the two classes of schools if the transference was to operate satisfactorily for the school and for the children. If not, either the standard of the secondary school would be lowered to bring it to the level of the boys who came from the elementary schools, and they would all regret that, or else the boys from the elementary schools would find that they were working insufficiently prepared at things which they imperfectly understood, and they would go away without having received the benefit which all desired they should get. That danger lurked in these new provisions. The first, second, and third requisite for education was Reality.

The reports on the year's work of the Sandcotes School (Parkstone, Dorset) and the Uplands School (St. Leonards)—both schools of the Church Education Corporation—were extremely good. The Sandcotes report comprised successes in the examinations for the Oxford and Cambridge Joint Board Higher Certificate, and in the examinations of the Associated Board of the Royal Academy and Royal College of Music (with 4 Distinctions in Harmony and Piano and 2 Special Certificates), and of the Royal Drawing Society (large percentage of Honours, and 3 full Honours Certificates). Uplands School gained 11 certificates, including 1 in Second Class Honours in the Oxford Locals; 1 Advanced Grade and 2 Intermediate Grade Certificates. In the examinations of the Associated Board of the Royal Academy and the Royal College of Music the pupil in the Advanced Grade obtaining the highest marks in the Centre—a distinction won by the school for the third time in four years; many Honours were gained in the examinations of the Royal Drawing Society; 7 Certificates in Grade III. were awarded by the London Institute of Plain Needlework; and 2 students qualified for entrance to Royal Holloway College.

The Leeds Education Committee will open the late Girls' High School in Woodhouse Lane in October as a temporary training college for elementary day school teachers. Accommodation will be provided for 250 students. In the event of the City Council deciding presently to purchase the Kirkstall Grange estate, it is

hoped to have the permanent college to be erected there ready by September of 1909. The Board of Education have expressed the opinion that the site is very suitable. The present idea is to make provision for 320 women and from 120 to 160 men, each one of whom will have to go into residence.

M. Cambon, the French Ambassador, has addressed a letter to the Chambres de Commerce, Municipalities, and County Councils of France, informing them of the foundation of a branch of the Commercial Institute of Paris at Liverpool. The curriculum comprises the study of languages and mathematics, and a practical initiation into various trade habits and requirements by actual observation of the methods of Liverpool firms. What Liverpool has done (the *Eastern Morning News* thinks) could be very effectively managed in Hull, ample opportunities being afforded by the classes at the Technical School. Moreover, Hull does a large trade with Dunkerque, Boulogne, Rouen, Bordeaux, and Marseilles, and many Frenchmen, as well as French firms, are directly interested in the fruit trade, which forms a considerable feature in Hull commerce.

A festival was held at Jena in honour of Prof. Rein's sixtieth birthday (August 10), over 500 friends of various nationalities being present. Presentations were made to the Professor from the various teachers' associations throughout Germany, and speeches were made by distinguished schoolmasters, setting forth the influence of his work on the schools. An interesting episode was the presentation of a silver inkstand with an inscription, from Prof. Rein's English friends. Miss Catherine I. Dodd, Principal of Cherwell Hall, Oxford, conveyed to the Professor the congratulations of her countrywomen who had had the good fortune to come under his influence, and spoke of the change in attitude respecting the training of teachers in England during the past few years. Fifteen years ago, though the University inhospitably closed its doors against her, Prof. Rein had given her a warm welcome, and admitted her to his school and seminar.

The Royal Commission on Italian Secondary Education (writes the Rome correspondent of the *Morning Post*) recommends a three years' preparatory course of instruction in the Italian language and Italian history, imparted by means of anecdotes; in colloquial French; and in the rudiments of science and geography. After this course of general study the Commission advises the creation of three different kinds of high schools—classical, scientific, and "mixed" or literary—one of which will be chosen by the pupil according to his natural bent. The curriculum of the classical school should consist of Latin, Greek, and French; that of the scientific should comprise mathematics, natural science, with special attention to laboratory work, Italian, French, and another language, preferably German; in the third, or "mixed," school Latin should be taught, not however as an end in itself, but as a means of understanding better modern literature and history. Geography should be here imparted to the pupil as a living thing, not as mere dots on a map. In all three kinds of schools philosophy ought to form a portion of the curriculum. Finally, the Commission deals with professional and technical education in all its branches. It advocates the formation of five secondary technical schools for the study of agriculture, manufactures, surveying, commerce, and actuarial and accountants' work. Above these, superior professional schools should crown the edifice.

Mr. John Andrew Doyle died at his residence, Pendarren, Crickhowell, South Wales. He was born in 1844, and educated at Eton and Balliol College, Oxford. He gained the Arnold Historical Essay Prize in 1869, and took a First Class in the Final Classical School. In 1870 he became a Fellow of All Souls', and remained a Fellow to his death. Mr. Doyle was well known as an authority on American history.

Dr. Henry de Beltgens Gibbins, who was but recently appointed Principal of Bishop's College, Lennoxville, Canada, and was home on a visit to his father at Bradford, was found dead in a railway tunnel between Bradford and Leeds (August 13). He had previously been Head Master of Liverpool Grammar School and of the King Charles I. School at Kidderminster. He was born in 1865, and educated at Bradford Grammar School and at Wadham College, Oxford. He was well known as a writer on industrial and economic subjects.

THE EDUCATIONAL LADDER.

Aberdeen University.—Lyon Prize (to the most distinguished B.Sc.): John Douglas Fiddes, M.A., B.Sc. Edmond Prize (to the most distinguished Bachelor of Law): Alexander Allardyce, M.A., B.L. John Murray Gold Medal and Scholarship (to the most distinguished Bachelor of Medicine and Surgery): David Horn, B.A., M.B., Ch.B.

Brighton College.—George Long Memorial Scholarship—P. Havelock Davies (Mr. Thomas's, Crescent House School, Brighton). Council Scholarships—C. M. Hobson, R. L. Nunn, and E. A. Mackintosh (Brighton College), W. H. Coxon and H. Hall (Messrs. Bouch and Pochin, Seafield, Lytham), L. Stokes (Mr. Lloyd Jones's, The Priory School, Malvern). House Exhibition—J. L. Cox (Mr. Lupton's, Hill Brow, Bexhill-on-Sea). Honourable mention—G. B. Harrison (Mr. Thomas's, Crescent House School).

Cambridge.—Higher Local Examinations:—Lowman Memorial Prize—C. Stewart, High School, Bedford; Fletcher Prize—M. M. Hardie, Easterton, Birnie, Elgin; additional Fletcher Prize—M. Richardson, James Allen's Girls' School, Dulwich. Gratuities: A. Heath, King Edward's High School, Birmingham; E. M. Smith, 68 Gough Road, Edgbaston; E. A. d'Auquier, St. Elphin's School, Darley Dale; M. M. Hardie, Easterton, Birnie; J. M. Earle, Croydon High School; E. M. Pugh, Clapham High School; M. T. Stead, City of London School for Girls; F. M. O'Loughlin, Ladies' College, Cheltenham; W. Slater, 2 Dryden Road, Enfield.

Cheltenham: Dean Close Memorial School. — Entrance Scholarships and Exhibitions: J. L. E. Warren (Monkstown Park School), J. A. Henderson (Southey Hall, Worthing), L. W. Halse (Bedford House School, Folkestone), A. A. D. Clarke Marlborough House, Reading).

Dover College.—Scholarships: A. C. H. Carr (Mr. A. P. Saunders, Horsell), C. G. Robinson (Rev. S. I. W. Shilcock, Kenley), E. P. Bury (Llandaff Cathedral School), G. E. S. Fursdon (Mr. L. Norman, Willingdon), I. F. Follit (Mr. H. C. Douglas, Clifton).

Edinburgh University.—General and Higher School Diploma—Barbara Ritchie Annan Brown, M.A. Edin.; Madge Wood Drummond, M.A., B.Sc. Edin.; Margaret Grace Mackay. M.A. Edin.; Julia Minnie Charlotte Waltenberg, M.A. Edin.; William Forbes, B.Sc. Edin. General Diploma—Euphemia Muir Bain, M.A. Edin.; Agnes Clegg, M.A. Edin.; William Clark Douglas, M.A. Edin.

Gray Scholarship for distinction in the Final Examination for B.Sc.—David Gibb, M.A., B.Sc. Science Research Scholarship—William Somerville Millar, M.A., B.Sc.

Eton College.—The following, in order of merit, are the names of candidates elected to supply vacancies in the Foundation Scholarships:—G. S. Madan, L. E. Gielgud, H. K. Chester, C. R. Hollway, H. R. Walker, E. C. Benthall, B. C. Mozley, C. A. Keele, C. G. Guy, C. J. Rowlatt, J. W. Chitty, L. C. Leggatt, R. G. de B. Devereux, C. W. S. Maclaren, R. H. Whately, D. J. Tuck, J. C. L. Barnett, and R. M. W. Chitty.

Felsted.—Scholarships—A. Moody (in the School), K. E. Langworth (Mr. A. M. Kilby, Lindisfarne, Blackheath), H. A. R. Crookham (in the School), G. E. Elliot (Mr. A. E. Henneer, Magnus School, Newark), F. E. B. Guise (Mr. L. M. Wallick, Inholmes, Cheltenham), O. J. Sangar (in the School), H. T. Silverwood (Palmer's School, Grays), E. de Q. Mears (private tuition), H. E. Bridgett (Miss Hale, Willington, Putney), D. J. Longden (Clare House, Margate). Supplementary Scholarships—A. H. Popert (Mr. A. R. Gurney, Brandon House, Cheltenham), D. N. Morgan (Mr. R. Burmann, Mount Arlington, Hindhead).

Glenalmond.—Scholarship—G. D. A. Fletcher (Glenalmond). Clerical Exhibition—J. G. Frere (Eastman's, Winchester).

Holt, Gresham's School.—Scholarships—Open, £50, given by the Fishmongers' Company: A. C. Estcourt (Gresham's School, lately at Mr. C. E. F. Stanford's, Rottingdean), P. R. Purves (Messrs. Charters and Field, West House School, Edgbaston); Norfolk, £30, given by the Governors: J. F. G. Pertwee (Yarmouth School), G. B. Johnson (St. George's School, Windsor), E. P. Hemsworth (Kirkley House School, Lowestoft), S. G. Marriott (Gresham's School).

Nottingham High School.—Trustees and Town Exhibition of £60 a year for 4 years: H. E. Chasteney, Scholar of St. John's

College, Cambridge. Cooper's First Exhibition (£60 a year for 4 years): R. B. Wray, Scholar of Selwyn College, Cambridge. Sir Thomas White Exhibition (£50 a year for 3 years): C. S. Robinson, Scholar of Emmanuel College, Cambridge. Thompson Exhibition (£30 a year for 4 years): H. V. Turner, Exhitioner of Merton College, Oxford. Samuel Maple's Scholarship (for 3 years): N. J. MacNamara. Samuel Maple's Scholarship (for 2 years): G. A. Hamlyn. Sir Thomas White Senior Scholarships: B. W. Gilbert and L. G. Lee. Sir Thomas White Junior Scholarships: W. L. Haubitz and E. H. Dance. Foundation Scholarships (for 3 years): S. H. C. Kipping, M. Thompson, and E. J. Rabinovitch. Foundation Scholarships (for 2 years): D. G. Hopewell and J. K. Turpin. Agnes Mellers Scholarships (extended for a fourth year): J. D. G. Bradbury, H. Green, and P. Phillips. Agnes Mellers Scholarships (for 3 years): W. H. Wood, from Lenton Trust School; A. Hancox, Berridge Road School; R. Thrale, Lenton Council School; J. Breedham, Mundella School. Sir Thomas White Entrance Scholarships (for 3 years): W. Hutchinson, Lenton Council School; W. G. Marshall, Lenton Trust School; W. A. Boot, Mundella School. Peveril Exhibition: J. A. Ball, Radford Boulevard School.

London: Royal Academy of Music.—The Goring Thomas Scholarship (Dramatic Composition), Lonisa Emma Lomax, of Brighton; the Schloesser Prize (Pianoforte Accompaniment), Sam H. Braithwaite, of Egremont, Cumberland; the Julia Leney Prize (Harp Playing), Lilian Hawkins, Bristol; the Frederick Westlake Memorial Prize (Pianoforte Playing and Sight Reading), Victor G. Booth, of New Zealand; the Macfarren Gold Medals (Pianoforte Playing), Myra Hess, of London, and Victor G. Booth; The Charlotte Walters Prizes (Elocution), Mary E. Harrison and Elsie St. David Williams; the Anne E. Lloyd Exhibition (Singing), Mary Fielding, Batley; the Parepa Rosa Prize (Basses), F. Percival Driver, Leicester; the Swansea Eisteddfod Prize, David Evans, Aberystwith; and the Hannah Mayer Fitzroy Prize (Violinists), Henry O. Parsons.

London: Royal College of Music.—Council Exhibitions: Violin—Evelyn M. Pickup. Singing—Beatrice B. Smith, Hilda M. Wright, Fannie Zausmer, Maud E. Wright, H. Dilys Jones. London Musical Society's Prize for Singing—F. Geraldine B. Wilson. Messrs. Hill & Sons' Violin Prize—Marjorie K. Beer (scholar). Gold Medal, presented by Rajah Sir S. M. Tagore of Calcutta (for the most generally deserving pupil)—A. R. C. Beckwith. Lilian Eldée Scholarship for Female Singers—D. E. Simpson (A.R.C.M.). Liverpool Scholarship (subject to confirmation by the Council)—Eugène A. Goossens (Violin). The Savage Club Exhibition—Mary M. Bond-Andrews (Singing).

London: Royal Society.—The Joule Studentship has been awarded to Dr. T. H. Laby, of the University of Sydney, now of the Cavendish Laboratory, Cambridge, for the investigation of the conditions of condensation and supersaturation of vapours other than steam.

London: St. Paul's Girls' School (Hammersmith).—Foundation Scholarships: Seniors—L. Bartenstein and S. Scott-Scott. Juniors—F. Boret, J. Brockman, E. Hooke, M. Scott, B. Taylor, D. Thompson, and L. White.

London: St. Paul's School.—The Mercers' Company awarded the following Exhibitions and Prizes:—Classics: C. M. Picciotto, E. I. James, E. H. Marker (an Honorary Exhibition), E. Y. Esskildsen, S. M. Green, and J. D. Monfries. Mathematics: J. S. Robinson and C. R. Franklin. J. S. Robinson also took the Keen Scholarship given to the best mathematician on leaving the school. Science: S. H. White and H. C. Dollman. Woolwich: H. N. Geary.

London University.—The Jessel Studentship of £50 for the year 1907–8 has been awarded to Mr. J. H. C. Searle, B.Sc., of University College.

Exhibitions and scholarships have been awarded on the results of the Exhibitions Examination held at the University in June to students who have passed the Matriculation Examination, as follows:—University Entrance Exhibitions of £40 a year, tenable for two years: F. L. Bassett, Dulwich College (additional exhibition); H. Eyden, William Ellis School, Gospel Oak; S. F. Hooper, Grammar School, Bradford; G. J. Lamb, East London College; H. J. Page, Southend-on-Sea Technical School. City Parochial Foundation Scholarship of £25 a year, tenable for four years: J. Walsh, Birkbeck College. Reid Scholarship of £50 a year, tenable for three years: Miss A. M. P. Pocock, Swindon Secondary School. St. Dunstan's Exhibitions will be announced later. The Mitchell Scholarships have not been awarded this year. The Bostock Scholarship for Women, of £60 a year, tenable for four years, has been awarded on the results of the Exhibitions Examination, held at the University in June, to Miss C. V. Turner, Grove School, Highgate. This scholarship is awarded by the Reid trustees every fourth year to a student intending to read for the Medical degree of the University of London at the London (Royal Free Hospital) School of Medicine for Women.

Scholarships have been awarded on the results of the Scholarships Examination held at the University in July to students who have passed an Intermediate Examination, or the Preliminary Scientific Examination, Part I., as follows:—

University Scholarships of £50 a year, tenable for one year:—J. Alexander, Queen's College, Oxford (Granville Scholarship), for Classics; P. P. Selver, East London College, for German; A. C. Wood, University College, and Miss C. M. Bowen, Royal Holloway College, for English; R. C. F. Dolley, University College (Derby Scholarship), and Miss H. C. Schaeffer, University College, for History; Miss E. A. Berthen, University College, Reading, and J. C. Smith, private study, for Elementary Psychology and Logic; E. H. Neville, William Ellis Endowed School (Sherbrooke Scholarship), F. Jackson, University College, and M. Jaffee, West Ham Municipal Technical Institute, for Mathematics; A. Eagle, Royal College of Science (Neil Arnott Scholarship), for Physics; H. S. Bion, University College, and C. H. Cunnington, University College, for Geology; F. Cook, Guy's Hospital, for Physiology.

Gilchrist Scholarships of £40 a year, tenable for two years, open to women only:—Miss J. I. Campbell, Birkbeck College, for French (qualified also for a University Scholarship); Miss D. Catmur, East London College, for Mathematics.

University College.—The Quain Law Prize has been awarded to Mr. Coleman Phillipson for an essay on "The Influence of International Arbitration on the Development of International Law."

London School of Economics and Political Science.—Shaw Research Studentship, N. B. Dearle, B.A., Senior Hulme Scholar, Brasenose, Oxford. Research Studentship, T. J. Faulder, M.A., M.B., B.S. Cambridge.

Oxford Local Examinations.—Boys were examined at 205 centres, and girls at 232. The total number of candidates examined (exclusive of the Hong Kong and Murree centres) was 18,514, as compared with 15,966 last year, and 12,990 Certificates were awarded, as against 11,568 in 1906. The greatest numerical advance was amongst the Senior candidates—6,370, as against 4,674 last year. The Junior candidates numbered 8,327, an increase of 657. The Preliminary candidates last year numbered 3,622; this year there were 3,817; 4,045 Senior candidates passed, 5,887 Junior, and 3,058 Preliminary. The first place in the First Class of the Senior candidates is gained by J. A. Thorne (Blundell's School, Tiverton), and G. M. Matthews (Merchant Taylors' School, Crosby, Liverpool) and G. P. Kurten (Whitgift Grammar School, Croydon) are bracketed for second place. The exhibitions of £30 offered by the delegates to the boy and girl candidates placed respectively highest in the Honours list are awarded to J. A. Thorne (Blundell's) and S. J. M. Finlayson (Westoe Road Secondary School, South Shields). The silver medal offered by the Royal Geographical Society is not awarded. The bronze medal is gained by C. E. Walsh (County School, Dover), and the prize offered by the Cobden Club is won by F. C. Worster (Whitgift Grammar School, Croydon). In the Oral Examination, which is a new feature, 71 candidates passed in French and 3 in German. The Junior candidates who succeed in obtaining a First Class number 200, as against 188 last year. E. Jones (Bury Grammar School) heads the list, E. Bamford (Wimbledon College) is second, and S. T. Tigar (St. Ignatius College, Stamford Hill) third. The scholarships of £10 offered by the Delegates to the boy and girl candidates placed respectively highest in the Honours list are awarded to E. Jones (Bury) and D. Taylor (Simon Langton School, Canterbury). Two silver medals were offered by the Royal Geographical Society; only one, however, is awarded, and is given to F. Ainsbury (Dudley Grammar School). In the Oral Examination 62 candidates passed in French and 6 in German. Among the Preliminary candidates the first place is gained by H. I. Macklin, and W. A. Davis and A. J. Moorat are bracketed for the second place: all three from Wimbledon College.

Oxford University.—Mr. Herbert J. Rose, hon. Scholar of Balliol (Rhodes Scholar), from McGill University (Montreal), has

been elected to a Fellowship at Exeter College. He is the first of the Rhodes Scholars to win an Oxford Fellowship. Mr. H. McKinnon Wood, son of Mr. McKinnon Wood, M.P., LL.D., has been elected to a Fellowship at Balliol College.

The Fellowship granted by the Gilchrist Trustees to the Association for the Education of Women in Oxford has been awarded to Miss A. E. Levett, Ladv Margaret Hall, recently First Class in the Honour School of Modern History.

St. Andrew's University.—Scholarships—Classics: Herbert Ramsay, M.A. Theology and Church History: James K. Russell, M.A., B.D. Bible Criticism and Hebrew: William Watson, M.A., B.D. Each scholarship is of the value of £80 and is tenable for one year.

SCHOOL HYGIENE.

SECOND INTERNATIONAL CONGRESS.

The Second International Congress on School Hygiene was held in London from August 5 to 10, under the presidency of Sir Lauder Brunton. The afternoon and evening of Saturday (August 3) were devoted to preliminary receptions of an informal character at the University, Londonderry House, and Caxton Hall. On Sunday there were services at Cathedrals and visits to the Zoological Gardens and Bisley Training Camp. Business commenced on Monday (August 5), when Lord Crewe, Lord President of the Council, opened the Congress, and Sir Lauder Brunton delivered his inaugural address. During the week subjects were discussed in eleven sections in the following general divisions:—(1) "The Physiology and Psychology of Educational Methods and Work" (Royal College of Science, New Buildings); (2) "Medical and Hygienic Inspection in School" (Central Technical College); (3) "The Hygiene of the Teaching Profession" (Imperial Institute); (4) "Instruction in Hygiene for Teachers and Scholars" (Imperial Institute); (5) "Physical Education and Training in Personal Hygiene" (Imperial Institute); (6) "Out-of-School Hygiene, Holiday Camps and Schools. The Relation of Home and the School" (University); (7) "Contagious Diseases, Ill-health, and other Conditions affecting Attendance" (Central Technical College); (8) "Special Schools for Feeble-Minded and Exceptional Children" (University); (9) "Special Schools for Blind, Deaf, and Dumb Children" (Royal College of Science, New Buildings); (10) "Hygiene of Residential Schools" (Royal College of Science, New Buildings); (11) "The School Building and its Equipment" (Central Technical College). In each Section numerous aspects of the general subject were expounded and examined. We select some of the official "Abstracts of Papers and Communications":

Child Nature and Routine (Miss W. Hoskyns Abrahall, M.A., Bristol).—School education is based upon routine. Daily routine in connexion with personal habits is the only routine which for young children can be regarded as good. School routine is a hindrance to the development, and requires to be radically reformed. This might be done without delay. Thus, bookwork should be postponed till after eight years of age; objective teaching adopted wherever possible; life histories of all objects used should be first taught. No drill should be allowed before ten. The size of classes should be reduced. In infant schools and rooms used by children under ten desks should be abolished, and the children sit on the floor. There should be no time-tables in infant schools, and a frequent interchange of teachers.

Medical Treatment at School in its Social, Economic, and Professional Aspects (John J. Cronin, M.D., Assistant Chief Medical Inspector, Department of Health, New York City).—About one-sixth of New York's children have had thorough physical examination, but treatment has been confined to a few conditions in about one third of the 162 schools. The results of this treatment have led the health authorities to demand facilities for extending treatment to all conditions of contagious disease. It is advisable that the medical man should be "municipalized." There is a close analogy between the State control of transmissible diseases such as small-pox, tuberculosis, &c., and conditions favourable to the spread of contagion. The objections on social grounds are only of theoretical importance; practical experience is in favour of such a scheme. The cost of treatment at school compares favourably with the necessary expenditure involved in securing the treatment of defective children by means of parental responsibility or through voluntary agencies. There is a great economic gain in the work done by efficient wage-earners of sound physique as compared with the inefficiency of the underfed ill-developed children as industrial agents. The economic gain of recognizing the prior claim of public welfare should not be overlooked. Therefore treatment at school can be justified not only by results, but also on social, economic, and professional grounds. The treatment of particular conditions should be determined on grounds of expediency.

De l'Enseignement de l'Hygiène dans les Ecoles et les Collèges (Dr. Fouveau de Courmesses, Vice-président de la Société Française d'Hygiène).—Traite de la nécessité d'enseigner l'hygiène à l'enfant par des exemples matériels, et en faisant de l'école même un modèle hygiénique. Pour l'hygiène physique, utilité d'avoir des classes à l'air de l'histoire naturelle, botanique, etc., et d'introduire l'étude du développement physique dans les jeux et les sports. Pour l'hygiène morale, l'enseignement personnel du maître à l'élève. L'utilité surtout de ne pas enseigner l'hygiène d'une manière didactique, mais rendre de tout professeur ou instituteur un professeur d'hygiène, afin que la science d'hygiène pénètre dans tous les autres sujets, et soit présente à toute heure et à tout propos.

Medical Supervision of Infant Schools (Dr. Marion Hunter, L.C.C. Medical Staff (Education), London).—Medical inspection and power to compel parents to remedy the ills of their children is the first step to improve the natural physique. We neglect curable conditions in childhood to treat them later in asylums, infirmaries, and hospitals. Compulsory, organized, universal medical inspection needed. School visited once a week. Education of mothers through medical inspection of infant schools. Absolute necessity of dental treatment in school. Experience shows that the Medical Inspector should never take anything for granted, but should see all and test all. In towns school attendance should not be delayed at the younger ages in the infant schools. Many conditions are in a most remediable stage, notably tubercular bone diseases.

The Conditions of Health of the Backward Children in the Elementary Schools of Copenhagen (Dr. Paul Hertz, M.D., Medical Officer of Schools, Copenhagen).—In Copenhagen elementary schools auxiliary classes are formed for children of backward or slow mental development. Investigation into causes of their retardation showed that poor physique, bad home conditions, over-work out of school hours, adenoids, ear trouble, and deafness were responsible. This emphasizes the need of careful medical supervision and control of schools, with power to compel parents to adopt remedial measures when possible.

Les Bains-douches dans une Ecole primaire de la Banlieue Parisienne (Dr. Louis de Bourdineau, Perreaux, Seine).—Parle d'un système de bains-douches dans la Commune de Perreaux, la construction de la salle avec dix cabines en fer peint. Chaque cabine est divisée en deux, la première de déshabillage et la seconde la cabine de douche. Grandeur de la cabine et son apparat. Explication de l'appareil de chauffage instantané à gaz; et du fonctionnement, sous surveillance, de sorte que 40 enfants peuvent se doucher à l'heure. Système simple, hygiénique et économe; table donnée de dépenses. La popularité des bains-douches avec les enfants.

Education and School Hygiene (Dr. German Anschutz, National Board of Health, Buenos Aires).—Argentina has put the public schools under medical inspection by specialists, there being a Medical Bureau at the Central Education Office, consisting of Chief Medical Officer and fourteen other Medical Inspectors. They insist on proper buildings, baths, cleanliness, vaccination, segregation of defective children; country schools for debilitated children.

Danish Public School and its relation to Tuberculosis (Dr. C. C. Jessen, Physician to the Public Schools, President of the Society of Physicians, Copenhagen).—The new Tuberculosis Act in Denmark is of the highest importance as a prophylactic measure. In the nineties, although diminishing, yet tuberculosis caused 14 per cent., and actual phthisis 10 per cent., of the Danish mortality. No great danger of child-to-child infection, but teacher-to-child infection may be serious.

Hygiene as a School Subject in Elementary Schools (Mr. Henry Kenwood, M.B., D.P.H., Professor of Hygiene, University College, London).—Hygienic habits have to be taught in school. Not necessary to teach the mechanism of respiration in order to inculcate the value of fresh air. The simplest hygienic training aided by frequent informal talks should permeate school life. The home and the parent can often be reached through the school and the child. Open window drill as a practical lesson.

The Teaching of Hygiene in Secondary Schools (Rev. H. B. Gray, D.D., Warden, Bradfield College).—Instruction in hygiene is required in youth. Training of body should be combined with explanation of cause and effect; also values of food stuffs should be taught. Disapproves of long lessons and cramming for scholarships.

Teachers should know the connexion between mental and physical conditions, and how best to draw out the various dispositions. Emphasizes the need of instruction in sexual and natural laws to ensure orderliness of conduct, both moral and physical.

Medical Supervision of London County Council Secondary Schools (Dr. Janet Campbell, M.D., M.S., L.C.C. Medical Staff, Education).—Medical supervision of these schools has only been undertaken recently. Most of the pupils intend to become teachers: therefore systematic inspection is necessary to maintain the standard of health at highest possible level, and to eliminate at an early stage those pupils who through physical defects are unfit to become teachers. Every child is examined soon after admission, as to vision, hearing, teeth, general physique, and condition of heart, lungs, and spine. Measurements of height, weight, and girth are taken. A permanent record of this examination is kept for future reference. The parents are notified as to defects, of which anæmia (with associated headaches), lateral curvature of the spine, and round shoulders are the commonest in the girls' schools. Much may be done to improve the physique by remedial exercises, and the cooperation of the drill mistress in these special classes is essential. It is important to guard against overstrain in the case of delicate children. Games, such as hockey, tennis, and cricket, form an important part of the curriculum, but even then medical supervision is very necessary.

Medical Supervision of Secondary Schools in Sweden (Dr. Gottfrid Jörnell, Medical Inspector of Schools, Hernösand, Sweden).—Secondary schools in Sweden have Medical Inspectors with well defined duties. The school building, ventilation, arrangement of work, drill, and any point connected with health of those attending are under the medical inspector's care. He must attend free any poor children requiring treatment. He must attend the drill class once a month. He confers with head master and gymnastic teacher whenever required.

Ear Disease in East London School Children (Miss Frances Ivens, M.S. London, L.C.C. Medical Staff, Education).—This paper is the result of an examination of 1,000 children aged 10 to 14, in the upper half of the elementary school, as to acuity of hearing, condition of tympanic membranes, and association of deafness with presence of adenoid growth and other throat diseases. Nearly one third of the children had deficient hearing, and 74 per cent. of these cases are associated with morbid conditions of the throat. The mental capacity of each child was estimated by the teacher. The tables show that, whereas 26 per cent. of the children with normal hearing attained a high degree of intelligence, only 17 per cent. of those with deficient hearing, and 14 per cent. of those with bad hearing, were placed in the same class. Removal of adenoids with suitable training in nasal breathing is followed not only by cessation of otorrhœa, but also by great improvement of hearing; and the lack of power of attention and concentration, so characteristic of mouth-breathers, is lessened. For these reasons all school children should not only be systematically examined for the presence of adenoids, but also should be efficiently treated. The habit of nasal breathing and the use of the handkerchief should be taught.

The Importance of School Anthropometrics in the Study and Control of National Evolution (John Gray, B.Sc., Hon. Treasurer, Royal Anthropological Society).—The object of anthropometrics is to collect exact data of the physical and mental characters, of the health, and of the environment and conditions of life of the people. Correlations between man and his environment can then be calculated, and our rational evolution studied and to a great extent controlled. A uniform scheme should be adopted; measurements should be made once a year. The analysis of statistics should be made by a central staff, where possible. There are two methods by which the average efficiency of a population may be improved—namely, (1) the eutropic method, which includes good upbringing; and (2) the eugenic method, which improves the stock by selection or good breeding. Eugenic principles are, apparently, ignored in this country. The only way to ascertain whether an insidious process of national deterioration is taking place is by comparing measurements of successive generations. The first step in this direction is the measurement of school children.

Exhibition of School Appliances.

In order that questions coming before the Congress might be practically illustrated an excellent exhibition had been organized and arranged in the University Building by the Royal Sanitary Institute. Here the planning, construction, and equipment of school buildings were demonstrated by actual exhibits, by models, and by designs, while school furniture and teaching appliances of every kind were on view. Many of the objects had been contributed by the colonies and by foreign countries, and altogether the exhibition proved very attractive.

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CURRENT EVENTS.

Fixtures. M. Auguste Canivet, B. ès L., will address the Société Nationale des Professeurs de Français en Angleterre on "L'Ilot du Grand-Bé" at the College of Preceptors on September 28 at 4 p.m.

* * *

The Incorporated Association of Assistant Masters in Secondary Schools will hold their Autumn General Meeting at King Edward's High School, Birmingham, on September 13 and 14. Chairman: Mr. A. A. Sommerville, Eton College. Prof. Muirhead (Birmingham) will read a paper on "Religion in Secondary Schools"; and the Richmond School (Yorkshire) case, which is really being fought by the Association on behalf of assistant masters, will be discussed.

* * *

At University College, London, a new course on School Hygiene (lectures, demonstrations, and practical work) will be given by Prof. Henry Kenwood and Dr. H. Meredith Richards, commencing on October 16. It is designed to meet the requirements of school teachers, school lecturers, and persons qualifying to become school inspectors and school medical officers.

Prof. Sir John Macdonell will include in his lectures next term a series on "The Hague Conference and International Law."

* * *

Dr. Thomas Hodgkin, B.A., D.C.L., Litt.D., Creighton Memorial Lecturer in the University of London for 1907–8, will deliver a lecture on "The Wardens of the Marches" at University College on October 4 at 5 p.m.

* * *

The Froebel Society will hold classes in the autumn for teachers and others engaged in the education of infants and young children. Subjects: Hygiene of Child Life; Application of Psychology to Modern Methods of Teaching; Handwork; Principles of Froebel and Pestalozzi; Nature Study; Brushwork; Blackboard Drawing; Literature and Games; Practical Geometry, with applications in various kinds of Handwork. Ten lectures in each subject. Very moderate fees. Apply to Miss Temple Orme, Froebel Society, 4 Bloomsbury Square, W.C.

* * *

The Royal Sanitary Institute will hold examinations in Hygiene in its bearings on School Life at Derby on October 4 and 5, and at Liverpool on October 25 and 26. Forms of application from the Offices of the Institute, Margaret Street, W.

Honours. In Oxford Convocation, on September 30, it will be proposed to confer the honorary degree of D.Sc. upon the following persons:—Charles Barrois, Member of the Institute of France, Professor of Geology and Mineralogy in the University of Lille; Albert Heim, Professor of Geology in the University of Zürich, and President of the Geological Commission of

Switzerland; Alfred Lacroix, Member of the Institute of France, Professor of Mineralogy at the Museum of Natural History, Paris; Albrecht Penck, Hofrat, Professor of Geography in the University of Berlin; Hans H. Rensch, Director of the Geological Survey of Norway; Ferdinand Zirkel, Geheimrat, Foreign Member of the Royal Society, Professor of Mineralogy and Geognosy in the University of Leipzig; Ludwig Mond, Ph.D., F.R.S., Member of the Accademia dei Lincei, Rome.

* * *

At King's College, London, the following have been elected Fellows: the Hon. W. F. D. Smith, M.P., Mr. Sidney Low, Mr. A. W. Pollard, the Rev. F. Relton, Prof. Sir J. K. Laughton, Prof. D. S. Capper, and Prof. Herbert Jackson.

* * *

The University of Edinburgh has conferred the honorary degree of LL.D. upon Dr. William Bayard, M.D., St. John's, New Brunswick, who took his medical degree in the University just seventy years ago (August 1, 1837).

* * *

The University of Glasgow has conferred the honorary degree of D.D. upon the Rev. Ralph Wardlaw Thompson, B.A., Foreign Secretary of the London Missionary Society.

* * *

The Royal University of Ireland has conferred the honorary degree of LL.D. upon Sir Otto Jaffé and the honorary degree of D.Mus. upon Mr. W. H. Grattan-Flood.

* * *

Prof. Kilpatrick, of Edinburgh University, has been made Officier de l'Instruction Publique, in recognition of long and important services to French students.

Endowments and Benefactions.

The Treasury Advisory Committee on the distribution of grants to colleges giving university education recommended that the following sums be allotted to the colleges named for the next two years:—£10,000 each to the Victoria University of Manchester, the University of Liverpool, and the University College, London; Birmingham University, £9,000; Leeds University, £8,000; King's College, London, £7,800; Armstrong College, Newcastle, £6,000; Nottingham University College, £5,000; Sheffield University, £5,000; Bedford College for Women, London, £4,000; Bristol University College, £4,000; Reading University College, £3,400; Hartley University College, Southampton, £2,250; and the London School of Economics, £500—total, £84,950. In this list the Victoria University is allotted £2,000 less than it received in the past two years, owing to the Committee's decision to reduce the maximum grant to £10,000. A Treasury minute (August 8) sanctioned the foregoing allocations, together with £1,000 to Dundee University College for the ensuing financial year. This leaves £14,050 of the Parliamentary vote for distribution in grants for special purposes.

* * *

Mr. Martin White, who has for some years generously endowed the teaching of Sociology in London University (Economics School), has now founded two Professorships in that subject—one permanently and the other for five years.

* * *

The Chadwick Trustees have made a grant of £500 a year for the next five years, and a supplementary grant of £150 for the session 1907–8, to the Departments of Hygiene and Municipal Engineering at University College, London.

* * *

A bronze bust of the late Prof. Francis W. Newman has been presented to University College (where he occupied the Latin Chair from 1846 to 1863) by Mrs. Bainsmith, who herself modelled it from the life.

* * *

Ruskin College requires some £20,000 for new buildings to accommodate 100 students.

* * *

The late Dr. William Jacks, of Glasgow, has left £20,000 to endow a Chair of Modern Languages in Glasgow University. He has also bequeathed £1,000 to each of the Glasgow and Edinburgh Border Counties Associations for scholarships.

* * *

The Government have promised a first instalment of £40,000 towards the new Technical College for Aberdeen and the North-East of Scotland. The total cost is estimated at £150,000.

* * *

Sir Donald Currie has given another £2,000 (making £22,000) towards the better equipment of Queen's College, Belfast.

Scholarships and Prizes.

Corpus Christi College, Cambridge, offers 4 (or 5) Scholarships in Classics or in Mathematics, and 2 Scholarships in Natural Science, £80 to £30 each, to candidates under nineteen at time of examination (January 1–3, 1908). Elected scholars begin residence in October, 1908. Certificates of birth and character to the Tutor, Mr. H. E. Fanshawe, by December 30.

* * *

Gonville and Caius College, Cambridge, has a Choral Exhibition vacant in October. Apply to the Master.

* * *

Lincoln College, Oxford, offers one scholarship (£80) and one exhibition (£30) in Modern History. Examination December 10. Bring certificates of conduct from colleges and schools. No age limit.

* * *

Scholarships of £10 and £20 will be awarded to students entering Cherwell Hall, Oxford, in October and January next.

Appointments and Vacancies.

Mr. Francis Darwin, M.A., M.B., F.R.S., Fellow of Christ's College and Reader in Botany, Cambridge, has been elected President of the British Association for next year.

* * *

The Rev. Thomas Wortley Drury, M.A., B.D., Principal of Ridley Hall, Cambridge, and formerly Vice-Principal of King William College, Isle of Man, and Principal of the Church Missionary Training College, Islington, has been appointed Bishop of Sodor and Man.

* * *

Mr. Howard Marsh, Professor of Surgery in the University of Cambridge, will (it is understood) be the new Master of Downing. Formal election in October.

* * *

Sir E. T. Candy, Hon. M.A., Caius College, has been appointed Teacher of Indian Law in the University of Cambridge; Mr. J. D. Anderson, late I.C.S., Teacher in Bengali; and Mr. A. H. Henry, M.A., R.U.I., Reader in Forestry.

* * *

Dr. E. A. Westermarck, formerly Lecturer on Sociology in the University of Finland, Helsingfors, and more recently in the London School of Economics, has been appointed to

one of the chairs in Sociology in the University of London just endowed by Mr. Martin White.

* * *

Dr. A. C. Haddon, D.Sc., F.R.S., Fellow of Christ's College and University Lecturer in Ethnology, Cambridge, has been appointed Lecturer in Ethnology in the University of London.

* * *

At University College, London, Mr. A. L. Hough, late of the Burma Commission, has been appointed Reader in Burmese; and Mr. Daniel Jones, Assistant Editor of *Le Maître Phonétique*, has been appointed Lecturer in Phonetics, for the session 1907–8.

* * *

Mr. A. F. Giles, M.A., has been appointed Lecturer in Ancient History in Edinburgh University.

* * *

Mr. John Clifford Valentine Behan, B.C.L., Hertford College—an Australian, if we mistake not—has been appointed Lecturer in Jurisprudence at University College, Oxford, in succession to Mr. George Baird Burnham, B.C.L., who has held the post for some 20 years with conspicuous distinction.

* * *

At Manchester University Mr. J. W. Bews, M.A. Edin., has been appointed Lecturer in Economic Botany; and Miss Hilda Johnstone, M.A. Man., Assistant Lecturer in History.

* * *

Miss Phœbe Sheavyn, D.Lit. Lond., Tutor and Lecturer in English Literature, Somerville College, Oxford, and formerly Fellow and Lecturer at Bryn Mawr College, Pennsylvania, has been appointed Tutor for Women Students and Warden of Ashburne House Hall of Residence, at Manchester University.

* * *

At Liverpool University, Mr. W. J. Sparrow, LL.D., Lecturer in the Liverpool School of Law, has been appointed Professor of Commercial Law; Mr. R. H. Cave, Associate Professor of English Literature; Miss Dora Mason, Assistant Lecturer in Classics; Mr. J. Mercer, Assistant Lecturer in Mathematics; and Dr. J. Owen, Clinical Lecturer in Medicine.

* * *

In Sheffield University, Mr. D. H. de Souza, M.B., B.S., B.Sc. Lond., has been appointed Demonstrator in Physiology; and Mr. W. F. G. Swann, B.Sc. Lond., Assistant Lecturer in Physics.

* * *

Mr. Charles S. Buxton, B.A. (Balliol), has been appointed Vice-Principal of Ruskin College, Oxford, in succession to Prof. Lees Smith (Bristol); and Mr. H. S. Furniss, M.A. (Hertford), Lecturer in Economics.

* * *

Mr. W. Goodwin, B.Sc., Ph.D., has been appointed Lecturer in Chemistry at the South Eastern Agricultural College, Wye.

* * *

The Principalship of Bishop's College, Lennoxville, Canada, is vacant through the tragic death of Dr. Gibbins. The Professorship of Mathematics is also vacant.

* * *

At the Church of Scotland Training College, Aberdeen, Mr. Charles McGregor has been appointed Master of Method; Mr. James Taylor, Lecturer on History and general subjects; Miss Adams, Assistant to the Lecturers in Science and Mathematics; and Miss Annie M. Souter, Assistant in Needlework.

* * *

At the United Free Church Training College, Aberdeen, Miss Agnes Walker has been appointed Lady Superintendent and Directress of Needlework; Mr. William Grant, Lecturer on Phonetics; Mr. George Davidson, Lecturer on Physics and Mathematics; Mr. John Mackay, Lecturer on Chemistry, Mathematics, and Geography; and Miss Jane A. Strachan, to assist the Lady Superintendent and to teach general subjects.

* * *

At Battersea Polytechnic, Mr. W. E. Curnock, M.Sc. Vict., B.Eng. Liv., Head of the Engineering Department, Huddersfield Technical School, and formerly Chief Assistant in the Engineering Department of the Northampton Institute, has been appointed Head of the Department of Mechanical Engineering and Building Trades; Mr. H. V. Janau, French master, Central Secondary School, Birmingham, has been appointed French master in the Secondary Day School for Boys; Miss Alice Raisin, D.Sc. Lond., science mistress, Tiffin's School for Girls, Kingston, and formerly science mistress at Bath High School, has been appointed assistant mistress for science subjects in the Secondary School for Girls; and Miss Lois W. Pope, senior mistress, Willesden Pupil-Teachers' Centre, has been appointed assistant mistress in the Secondary School for Girls.

* * *

Mr. S. Illingworth Butler, senior master, Boys' Middle School, Tiverton, has been appointed Head Master of the Blue Coat School, Reading.

* * *

Mr. H. A. Francis, M.A. Oxon., second master of Newton Abbot School, has been appointed Head Master of Dorchester Grammar School.

* * *

The Rev. Richard Dutton Budworth, M.A. Oxon., assistant master, Clifton College, has been appointed Head Master of Durham School.

* * *

Mr. Frederick Blagden Malim, M.A. Cantab., assistant master and house master, Marlborough College, has been appointed Head Master of Sedbergh School.

* * *

Miss Luard, Head Mistress of the Queen's College School, Harley Street, has been appointed Principal of Whitelands College, Chelsea.

* * *

Miss Frances E. Tooke, Head Mistress of Gateshead High School, has been appointed Head Mistress of Rutherford College Secondary Day School for Girls, Newcastle-upon-Tyne.

* * *

The Rev. Edwin J. D. Hellier, M.A. Oxon., Lecturer and Assistant Chaplain, has been appointed Vice-Principal, of Dorchester Missionary College. He is succeeded by the Rev. Arthur J. Dexter, B.A. Oxon., curate of St. Matthew's, Victoria Docks.

* * *

The Rev. Charles H. D. Grimes, M.A. Cantab., Vice-Principal of St. Boniface, Warminster, has been appointed Principal of the Clergy Training College, Perth, W.A.

* * *

Canon Gill is about to retire from the Principalship of the Diocesan Training College, Fishponds, near Bristol.

M. Henri Durlac has resigned the Lectureship in French Language and Literature at University College, Dundee.

* * *

The Principalship of Campbell College, Belfast, is vacant through the sudden death of Mr. James A. McNeill, M.A.

* * *

Mr. W. W. Sawtell, B.A. Lond., Vice-Master, Battersea Polytechnic Day School, has been appointed Head Master of Uxbridge County Secondary School.

* * *

The Rev. Egbert I. A. Phillips, M.A. Cantab., B.Sc. Lond., science master, Sherborne School, has been appointed Head Master of Kelly College, Tavistock.

* * *

The Rev. J. Maurice Schulhof, M.A. Cantab. and Oxon., Fellow of St. Augustine's, Canterbury, has been appointed Head Master of King James I. School, Bewdley.

* * *

Mr. Samuel Pollitt, B.Sc. Vict., senior science master, Tottenham County School, has been appointed Head Master of Southall County School.

* * *

Mr. R. C. Shorter, B.A. Cantab., has been appointed assistant master at Taunton School.

* * *

Mr. A. Mumford has been appointed art master at Willesden and Harrow Polytechnics; Mr. W. B. Watson, art master in the Secondary Schools; and Miss Charter, drill instructress—under the Middlesex Education Committee.

* * *

The Royal Albert Memorial College, Exeter, requires a Lecturer in English (£175), a Lecturer in Mathematics (lady preferred) (£120), and an Assistant Mistress of Method for the Day Training Department (£120 to begin with). Apply to the Registrar by September 10.

Literary Items. Mr. Frowde is adding Palgrave's "Golden Treasury" (with no fewer than one hundred additional poems, including the whole of Fitzgerald's "Omar Kháyyám") to the series of Oxford Editions of standard authors; Dr. Todhunter's verse translation of Heine's "Buch der Lieder" to "The Oxford Library of Translations"; Galt's "Annals of the Parish" to "The Oxford Library of Prose and Poetry"; and half a dozen notable works to the popular series of "The World's Classics."

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General. The Educational Supply Association is furnishing the masters' and scholars' desks for the new University College School at Hampstead. The scholars' desks, we learn, are of a special construction, "each desk being adjustable, the seat and desk separately, so that not only can the desk be arranged to suit pupils of any height, but the respective needs of long-legged or long-bodied scholars can be provided for. The movements are automatic. Every desk is fitted with a comfortable chair seat and back."

THE BRITISH ASSOCIATION AT LEICESTER.

EDUCATIONAL SCIENCE SECTION.

THE APPLICATION OF SCIENTIFIC METHOD TO EDUCATIONAL PROBLEMS.

Presidential Address by Sir Philip Magnus, B Sc., B.A., M.P.

Notwithstanding the fact that the greater part of my life has been spent in educational work, in teaching, in examining, in organization, and in the investigation of foreign systems of instruction, I have experienced considerable difficulty in selecting from the large number of subjects that crowd upon me a suitable one on which to address you as President of a Section of the British Association devoted to educational science.

Is there a Science of Education?

At the outset I am troubled by the title of the section over which I have the honour to preside. I cannot refrain from asking myself the question: Is there an educational science, and, if so, what is its scope and on what foundations does it rest? The object of the British Association is the advancement of science, and year by year new facts are recorded in different branches of inquiry, on which fresh conclusions can be based. The progress of past years, whether in chemistry, physics, or biology, can be stated. Can the same be said, and in the same sense, of education? It is true that the area of educational influence is being constantly extended. Schools of every type and grade are multiplied, but is there any corresponding advance in our knowledge of the principles that should govern and determine our educational efforts, or which can justify us in describing such knowledge as science? If we take science to mean, as commonly understood, organized knowledge, and if we are to test the claim of any body of facts and principles to be regarded as science by the ability to predict, which the knowledge of those facts and principles confers, can we say that there exists an organized and orderly arrangement of educational truths, or that we can logically, by any causative sequence, connect training and character either in the individual or in the nation? Can we indicate, with any approach to certainty, the effects on either the one or the other of any particular scheme of education which may be provided? It is very doubtful whether we can say that educational science is yet sufficiently advanced to satisfy these tests.

But, although education may not yet fulfil all the conditions which justify its claim to be regarded as a science, we are able to affirm that the methods of science applicable to investigations in other branches of knowledge are equally applicable to the elucidation of educational problems. To have reached this position is to have made some progress. For we now see that, if we are ever to succeed in arriving at fixed principles for guidance in determining the many difficult and intricate questions which arise in connexion with the provision of a national system of education or the solution of educational problems, we must proceed by the same methods of logical inquiry as we should adopt in investigating any other subject matter.

Collection and Collation of Facts.

In order to bring education within the range of subjects which should occupy a place in the work of this Association, our first efforts should be directed towards obtaining a sufficient body of information from all available sources, past and present, to afford data for the comparisons on which our conclusions may be based. One of the five articles of what is known as the Japanese Imperial Oath states: "Knowledge shall be sought for throughout the whole world, so that the welfare of the Empire may be promoted"; and it may certainly be said that, as the welfare of our own Empire is largely dependent on educational progress, a wide knowledge of matters connected with education is indispensable if we are to make advances with any feeling of certainty that we are moving on the right lines.

There can be no doubt that of late years we have acquired a mass of valuable information on all sorts of educational questions. We are greatly indebted for much of our knowledge of what is being done in foreign countries to the reports of different Commissions, and more particularly to those Special Reports issued from the Board of Education, first under the direction of my predecessor in this chair, Prof. Sadler, and latterly of his successor at the Board, Dr. Heath. But much of the information we have obtained is still awaiting the hand of the scientific worker to be properly coordinated and arranged. A careful collation of facts is indispensable if we are to deduce from them

useful principles for our guidance, and unfortunately we in this country are too apt to rest content when we have provided the machinery for the acquisition of such facts without taking the necessary steps to compare, to coordinate, and to arrange them on some scientific principle for future use. Within the last week or two a Bill has passed through several stages in Parliament for requiring Local Authorities to undertake the medical inspection of school children; but, unless the medical inspectors, throughout the country conduct their investigations on certain well considered lines laid down for them by some Central Authority, we shall fail to obtain the necessary data to enable us to associate educational and physical conditions with a view to the improvement of the training given in our schools.* On the other hand, although I personally am sceptical as to the results, we have reason to believe that the inquiry recently undertaken into the methods adopted here and elsewhere for securing ethical, as distinct from specifically religious, training will be so conducted as to give us not only facts, but the means of inferring from those facts certain trustworthy conclusions.

The consideration of education as a subject capable of scientific investigation is complicated by the fact that it necessarily involves a relation—the relation of the child or adult to his surroundings. It cannot be adequately considered apart from that relation. We may make a study of the conditions of the physical, intellectual, and ethical development of the child, but the knowledge so obtained is only useful to the educator when considered in connexion with his environment and future needs, and the means to be adopted to enable him, as he grows in physical, intellectual, and moral strength, to obtain a mastery over the things external to him. Education must be so directed as to prove the proposition that "knowledge is power." It can only be scientifically treated when so considered. Education is imperfectly described when regarded as the means of drawing out and strengthening a child's faculties. It is more than this. Any practical definition takes into consideration the social and economic conditions in which the child is being trained, and the means of developing his faculties with a view to the attainment of certain ends.

It is in Germany that this fact has received the highest recognition and the widest application, and for this reason we have been accustomed to look to that country for guidance in the organization of our schools. We have looked to Germany because we perceived that some relation had been there established between the teaching given to the people and their industrial and social needs, and, further, that their success in commerce, in military and other pursuits was largely due to the training provided in their schools. Unmindful of the fact that education is a relation, and that consequently the same system of education is not equally applicable to different conditions, there were many in this country who were only too ready to recommend the adoption of German methods in our own schools. Experience soon showed, however, that what may have been good for Germany did not apply to England, and that, in educational matters certainly, we do well to follow Emerson, who, when addressing his fellow-citizens, declared: "We will walk on our own feet, we will work with our own hands, and we will speak our own minds." Still, the example of Germany and the detailed information which we have obtained as to her school organization and methods of instruction have been serviceable to us.

Whilst all information on educational subjects is valuable, I am disposed to think that in our efforts to construct an educational science we may gain more by inquiring what has been effected in some of the newer countries. Wherever educational problems have been carefully considered and schemes have been introduced with the express intention and design of training citizens for the service of the State and of increasing knowledge with a view to such service those schemes may be studied with advantage. Thus we may learn much from what is now being done in our colonies. Their efforts are more in the nature of experiments. Our colonies have been wise enough not to imitate too closely our own or any foreign system. They have started afresh, free from prejudice and traditions, and it is for this reason that I look forward with interest to the closer connexion in educational matters of the colonies with the mother country, and I believe that we shall gain much knowledge and valuable experience from the discussions of the Federal Conference which has recently been held in London, and which, I understand, is to be repeated a few years hence.

Need of Direct Experiments.

But, valuable as are the facts, properly collated and systematically arranged, which a knowledge of British and foreign methods may afford us in dealing scientifically with any educational problem, it is essential that we should be able to test and to supplement the conclusions based on such knowledge, whenever it is possible, by direct experiments applicable to the matter under investigation. We have not yet recognized the extent to which experiments in education, as in other branches of knowledge, may help in enabling us to build up an educational science. Some years since there was established in Brussels an *école modèle* in which educational experiments are tried. I visited the school in the year 1880, and I could easily point to many improvements in primary education which found their way from that school through the schools of Belgium and France to our own country, and, indeed, to other parts of the world. From a special Report on Schools in the North of Europe, recently published by the Board of Education, we learn that in Sweden the value of such experiments is fully recognized. We are told that in that country "it was early felt that the uniformity in State schools was of so strict a kind that some special provision should be made for carrying out educational experiments," and experiments in many directions have been made, mainly in private schools, which receive, however, special subventions from the State. We gather from the same Report that the State regards the money as well earned "if the school occasionally originates new methods from which the schools can derive profit." I venture to think that experimental schools might with advantage be organized under the direction of some of our larger Local Authorities. The children would certainly not suffer by being made the subjects of such experiments. The intelligent teaching which they would receive—for it is only the most capable teachers who should be trusted with such experiments—would more than compensate for any diminution in the amount of knowledge which the children might acquire, and indeed such experimental schools might be conducted under conditions which would ensure sound instruction. Many improved methods of teaching are constantly advocated, but fail to be adopted because there is no opportunity of giving them a fair trial. As a general rule it is only by the effort of private individuals or associations that changes in system are effected, and teachers are enabled to escape from the old grooves on to new lines of educational thought and practice. It is not difficult to refer to many successful experiments. The general introduction into our schools of manual training was the direct result of experiments carefully arranged and conducted by a Joint Committee of the City Guilds and the late London School Board. Experiments in the methods of teaching physical science, chemistry, and geometry have been tried, with results that have led to changes which have revolutionized the teaching of those subjects. The age at which the study of Latin should be commenced with a view to the general education of the scholar has been the subject of frequent trial. I would like to see such experiments more systematically organized, and I am quite certain that the curriculum of our rural and of our urban schools would soon undergo very considerable changes if the suggestions of competent authorities could receive a fair trial under conditions that would leave no manner of doubt as to the character of the results.

It would seem, therefore, that, if our knowledge of the facts and principles of education is not yet sufficiently organized to enable us to determine *a priori* the effect on individual or national character of any suggested changes, education is a subject that may be studied and improved by the application to it of scientific method, by accurate observation of what is going on around us, and by experiments thoughtfully conducted. This is the justification of the inclusion of the subject among those that occupy the attention of a separate section of this Association. Our aim here should be to apply to educational problems the well known canons of scientific inquiry; and, seeing that the conditions under which alone any investigation can be conducted are in themselves both numerous and complicated, it is essential that we should endeavour to liberate, as far as possible, the discussion of the subject from all political considerations. Such investigations are necessarily difficult. We have to determine both statically and dynamically the physical, mental, and moral condition of the child in relation to his activities and surroundings, and we have further to discover how he is influenced by

* Since this was written the President of the Board of Education has stated in the House of Commons that "it was the intention of the Board, if the Bill now before Parliament passed, to establish a medical bureau, which would guide and advise the Local Authorities as to the nature of the work they would have to do under the Act."

them, how he can affect them, and the character of the training which will best enable him to utilize his experiences and to add something to the knowledge of to-day for future service.

Adaptation to Modern Conditions.

Notwithstanding the undoubted progress which we have made, it cannot be denied that in this country there still exists a large amount of educational unrest, of dissatisfaction with the results of our efforts during the last thirty years. This is partly due to the fact that there is much loose thinking and uninformed expression of opinion on educational questions. No one knows so little as not to believe that his own opinion is worth as much as another's on matters relating to the education of the people. In this way statements the value of which has not been tested pass current as ascertained knowledge, and very often ill considered legislation follows. In this country, too, the difficulty of breaking away from ancient modes of thought is a great drawback to educational progress. Suggestions for moderate changes, which have been most carefully considered, are deferred and decried if they depart to any great extent from established custom, and the objection to change very often rests on no historical foundation. Occasionally, too, the change proposed is itself only a reversion to a previous practice which was rudely broken by thoughtless and unscientific reformers. The opposition which was so long raised to the establishment of local universities was largely due to want of knowledge on the subject; and certainly the creation, some seventy years ago, of a teaching University in London was actually hindered through a mere prejudice, which broader views as to the real purposes of university teaching and fuller information on the course of university development would have removed.

There never was a time perhaps when it was more necessary than now that education should be regarded dispassionately, apart from political bias, as a matter of vital interest to the people as a whole. Education nowadays is a question which affects not only the life of a few privileged, selected persons, but of the entire body of citizens. The progress that has been made during the last few years in nationalizing our education has been very rapid. It may be that it has been too rapid, that sufficient thought has not been given to the altered social and industrial conditions which have to be considered. We have witnessed a strong desire and a successful effort to multiply secondary and technical schools and to open more widely the portals of our universities. The object of the desire is good in itself. As the people grow in knowledge the demand for higher education will increase; but the serious question to be considered is whether the kind of education which was supplied in schools, founded centuries ago to meet requirements very different from our own, is equally well adapted to the conditions which have arisen in a state of society having other needs and new ideals. Very rightly our students in training for the profession of teachers are expected to study the writings of Locke, Rousseau, Milton, Montaigne, and others; but many are apt to overlook the fact that these writers had in view a different kind of education from that in which modern teachers are engaged, and that their suggestions, excellent as many of them are, were mainly applicable to the instruction to be given by a tutor to his private pupil, and had little or no reference to the teaching of the children of the people in schools expressly organized for the education of the many. Only recently have we come to realize that a democratic system of education, a system intended to provide an intellectual and moral training for all citizens of the State, and so organized that, apart from any consideration of social position or pecuniary means, it affords facilities for the full development of capacity and skill wherever they may occur, must be essentially different in its aims and methods from that under which many of us now living have been trained. It has also been brought home to us that the marvellous changes in our environment, in the conditions under which we live and work, whether in the field, the factory, or the office, have necessitated corresponding changes in the education to be provided as a preparation for the several different pursuits in which the people generally are occupied. Yet, notwithstanding these great forces which have broken in upon and disturbed our former ideals, forces the strength and far-reaching effects of which we really admit, we still hesitate to face the newly arisen circumstances and to adapt our educational work to its vastly extended area of operation and to the altered conditions and requirements of modern life.

When I say we hesitate to face the existing circumstances I do not wish to be misunderstood. As a fact, changes are continually being discussed, and are from time to time introduced into our schools. But such modifications of our existing methods are generally isolated and detached, and have little reference to the more comprehensive measures of reform which are now needed to bring our teaching into closer relation with the changed conditions of existence consequent on the alterations that have taken place in our social life and surroundings.

Four years ago, it will be remembered, a Committee of this Section was appointed to consider and to report upon the "Courses of Experimental, Observational, and Practical Studies most suitable for Elementary Schools." That Committee, of which I had the honour to be chairman, presented a report to this Section at the meeting of the Association held last year at York. The general conclusion at which they arrived was that "the intellectual and moral training, and indeed to some extent the physical training, of boys and girls between the ages of seven and fourteen would be greatly improved if active and constructive work on the part of the children were largely substituted for ordinary class teaching, and if much of the present instruction were made to arise incidentally out of, and to be centred around, such work." It is too early, perhaps, to expect that the suggestions made in that report should have borne fruit; but I refer to it because it illustrates the difference between the spasmodic reforms which from time to time are adopted, under pressure from bodies of well meaning representatives of special interests, and the well considered changes recommended by a Committee of men and women of educational experience who have carefully tested the conclusions at which they have arrived.

Errors in the Elementary System.

There can be no doubt that, as regards our elementary education, there is very general dissatisfaction with its results, since it was first nationalized thirty-seven years ago. Our merchants and manufacturers and employers of labour, our teachers in secondary and technical schools all join in the chorus of complaint. They tell us that the children have gained very little useful knowledge and still less power of applying it. There is enough in this general expression of discontent to give us pause and to make us seek for a rational explanation of our comparative failure. The inadequacy of the results attained to the money and effort that have been expended is in no way due to any want of zeal or ability on the part of the teachers, or of energy on the part of School Boards or Local Authorities. They have all discharged the duties which were imposed upon them. It is due rather to the fact that the problem has been imperfectly understood, that our controlling authorities have had only a vague and indistinct idea of the aim and end of the important work which they were charged to administer. If we look back upon the history of elementary education in this country since 1870, we cannot fail to realize how much its progress has been retarded by errors of administration due very largely to the want of scientific method in its direction. It is painful to reflect, for instance, on the waste of time and effort, and on the false impressions produced as to the real aim and end of education, owing to the system of payment on results, which dominated for so many years a large part of our educational system. We must remember that it is only within the last few decades that education has been brought within reach of all classes of the population. Previously it was for the few—for those who could pay high fees; for those who were training for professional life, whether for the Church, the Army, the Navy, law, or medicine, or for the higher duties of citizen life. This had been the case for centuries, not only in this country, but in nearly all parts of the civilized world. If we read the history of education in ancient Greece or Rome, or mediæval Europe, we shall see that popular education, as now understood, was unknown. All that was written about education applied to the few that got it, and not to the great mass of the people engaged in pursuits altogether apart from those in which the privileged classes were employed. Trade and manual work were despised, and were considered degrading and unworthy of the dignity of a gentleman. I need scarcely say that these social ideas are no longer held. The fabric of society is changed, and we have to ask ourselves whether the methods of education have been similarly changed, whether they have been wisely and carefully adapted to the new order of things. What is it that has really happened?—Is it not true that we have annexed the methods and subjects of teaching which had been employed during many centuries in the training of the few and applied them to the education of the people as a whole—to those who are engaged in the very callings which were more or less contemned? Surely it is so, and the results are all too manifest. We have applied the principles and methods of

secondary education of the middle ages to our new wants, to the training of the people for other duties than those to which such education was considered applicable, and it is only within the last few years that we have begun to see the error of our ways. In the Report of your Committee, to which I have referred, it is pointed out that the problem of primary education has been complicated by the introduction of the methods which for many years prevailed in secondary schools, and at a meeting of the National Education Association, held only a few weeks since, it was truly said: "In this country secondary education preceded primary by several centuries, and so the nation now finds itself with the aristocratic cart attempting to draw the democratic horse."

Let it not be supposed that in the days not so far distant, yet stretching back into the remote past, the people as a whole were uneducated. This was not so. But we have to widen the meaning of "education" to include the special training which the people then received—an education that was acquired without even the use of books. It cannot for one moment be said that the artisans, the mechanics, the farm hands, male and female, were wholly uneducated in those far-off days. In one sense possibly they were. Very few of them could read or write. But from earliest childhood they had received a kind of training the want of which their descendants have sadly felt in the cloistered seclusion of the modern elementary school. They were brought face to face with Nature. They learned the practical lessons of experience; and as they grew up their trade apprenticeship was an education which we have been trying vainly to reproduce. They gained some knowledge of the arts and sciences, as then understood, underlying their work. Their contact with their surroundings made them thoughtful and resourceful; for Nature is the most exacting and merciless of teachers. The difficulties they had to overcome compelled them to think, and of all occupations none is more difficult. They were constantly putting forth energy, adapting means to ends, and engaging in practical research. In the field, in the workshop, and in their own homes boys and girls acquired knowledge by personal experience. Their outlook was broad. They learned by doing. It is true that nearly all their occupations were manual; but Emerson has told us: "Manual training is the study of the external world."

Compare for a moment this training with that provided in a public elementary school, and you cannot be suprised to find that our artificial teaching has failed in its results; that our young people have gained very little practical knowledge, and that what they have gained they are unable to apply; that they lack initiative and too often the ability to use books for their own guidance or the desire to read for self-improvement. We seem to have erred in neglecting to utilize practical pursuits as the basis of education, and in failing to build upon them and to evolve from them the mental discipline and knowledge that would have proved valuable to the child in any subsequent occupation or as a basis for future attainments. We have made the mistake of arresting, by means of an artificial literary training, the spontaneous development of activity, which begins in earliest infancy and continues to strengthen as the child is brought into ever closer contact with his natural surroundings. We have provided an education for our boys which might have been suitable for clerks; and, what is worse, we have gone some way, although we have happily cried a halt, to make our girls into "ladies," and we have run some risk of failing to produce women.

Suggestions of Reform.

If we are to correct the errors into which we have drifted, if we are to avert the consequences that must overtake us through having equipped our children for their life-struggle with implements unfitted for their use, we must consider afresh the fundamental ideas on which a system of elementary education should be based. Instead of excluding the child from contact with the outer world, we must bring him into close relationship with his surroundings. It was given to man to have dominion over all other created things, but he must first know them. It is in early years that such knowledge is most rapidly acquired, and it is in gaining it that the child's intellectual activities are most surely quickened.

It is unfortunate that we failed to realize this great function of elementary education when we first essayed to construct for ourselves a national system. The three R's, and much more than that, are essential and incidental parts of elementary education. But what is needed is a *Leitmotif*—a fundamental idea underlying all our efforts and dominating all our practice, and I venture to think that that idea is found in basing our primary education on practical pursuits, on the knowledge gained from actual things, whether in the field, the workshop, or the home.

Instead of fetching our ideas as to the training to be given in the people's schools from that provided in our old grammar schools, we should look to the occupations in which the great mass of the population of all countries are necessarily engaged, and endeavour to construct thereon a system with all such additions and improvements as may be needed to adapt it to the varied requirements of modern life. By this process—one of simple evolution adjusted to everyday needs—a national system of education might be built up fitted for the nation as a whole—a system founded on ideas very different from those which, through many centuries, have governed the teaching in our schools. In the practical pursuits connected with the field, the workshop, and the home, and in the elementary teaching of science and letters incidental thereto, we might lay the foundation of a rational system of primary education.

These three objects—the field, the workshop, and the home—should be the pivots on which the scheme of instruction should be fixed, the central thoughts determining the character of the teaching to be given in rural and urban schools for boys and girls. It was Herbart who insisted on the importance of creating a sort of centre around which school studies should be grouped with a view to giving unity and interest to the subjects of instruction. I have elsewhere shown how a complete system of primary education may be evolved from the practical lessons to be learned in connexion with out-door pursuits, with workshop exercises and with the domestic arts, and how, by means of such lessons, the child's interest may be excited and maintained in the ordinary subjects of school instruction—in English, arithmetic, elementary science, and drawing. In the proposals I am now advocating I am not suggesting any narrow or restricted curriculum. On the contrary, I believe that, by widening the child's outlook, by closely associating school work with familiar objects, you will accelerate his mental development and quicken his power of acquiring knowledge. I would strongly urge, however, that the child should receive less formal teaching, that opportunities for self-instruction, through out-door pursuits, or manual exercises, or the free use of books, should be increased, so that as far as possible the teacher should keep in view the process by which in infancy and in early life the child's intelligence is so rapidly and marvellously stimulated. Already we have discovered that our unscientific attitude towards primary education has caused us to overlook the essential difference between the requirements of country and of town life, and the training proper to boys and girls. Our mechanical methods of instruction, as laid down in codes, make for uniformity rather than diversity, and we are only now endeavouring, by piecemeal changes, to bring our teaching somewhat more closely into relation with existing needs. But the inherent defect of our system is that we have started at the wrong end, and, instead of evolving our teaching from the things with which the child is already familiar, and in which he is likely to find his life's work, we have taken him away from those surroundings and placed him in strange and artificial conditions, in which his education seems to have no necessary connexion with the realities of life.

Inadequate Tentatives.

The problem of primary education is to teach by practical methods the elements of letters and of science, the art of accurate expression, the ability to think and to control the will; and the ordinary school lessons should be such as lead to the clear apprehension of the processes that bring the child into intimate relation with the world in which he moves. During the last few years the importance of such teaching has dimly dawned upon our educational authorities, but, instead of being regarded as essential, it has been treated as a sort of *extra* to be added to a literary curriculum, already overcrowded. What is known as manual training is to some extent encouraged in our schools, but it forms no part of the child's continuous education. It is still hampered with conditions inconsistent with its proper place in the curriculum, and is uncoordinated with other subjects of instruction. Moreover no connecting link has yet been forged between the teaching of the Kindergarten and workshop practice in the school. We speak of lessons in manual training as something apart from the school instruction, as something outside the school course, on the teaching of which special grants are paid. Twenty or thirty years ago people used to talk about 'teaching technical education,' and from this unscientific way of treating the connexion that should exist between hand-work and brain-work our authorities have not yet freed themselves.

It is true we have long since passed that stage when it

was thought that the object of instruction in the use of tools was to make carpenters or joiners; but, judging from a report recently issued by the Board of Education, it would seem that it is still thought that the object of cookery lessons to children of twelve to fourteen years of age is the training of professional cooks. Until the Board's Inspectors can be brought to realize that the aim and purpose of practical instruction in primary schools, whether in cookery or in other subjects, is to train the intelligence through familiar occupations, to show how scientific method may be usefully applied in ordinary pursuits, and how valuable manipulative skill may thus be incidentally acquired, it does not seem to me that they themselves have learned the most elementary principles of their own profession. An anonymous teacher, writing some weeks since in the *Morning Post*, said:

The cookery class can be made an invaluable mental and moral training ground for the pupils, the most stimulating part of primary education. It teaches unforgettable lessons of cleanliness and order, of quickness and deftness of movements. The use of the weights and scales demands accuracy and carefulness, and the raw materials punish slovenliness or want of attention with a thoroughness which the most severe of schoolmasters might hesitate to use. Practical lessons in chemistry should form an important feature of each class. . . . The action of heat and moisture on grains of rice provides an interesting lesson on the bursting of starch cells, and the children's imagination is awakened by watching the hard isolated atoms floating in milk change slowly to the creamy softness of a properly made rice pudding. The miraculous change in the oily white of egg when it is beaten into a mountain of snowy whiteness gives them interest in the action of air and its use in cookery.

Can the teaching of grammar or the analysis of sentences provide lessons of equal value in quickening the intelligence of young children?

Continuity of Primary and Secondary Grades.

I must add one word before passing from this suggestive illustration of the value of scientific method in the treatment of educational questions. We live in a democratic age, and any proposed reform in the teaching of our primary schools must be tested by the requirement that the revised curriculum shall be such as will provide not only the most suitable preparatory training for the occupations in which four-fifths of the children will be subsequently engaged, but will, at the same time, enable them or some of them to pass without any breach of continuity from the primary to the secondary school. There must be no class distinctions separating the public elementary from the State-aided secondary school. The reform I have suggested is unaffected by such criticism. The practical training I have advocated, whether founded on object lessons furnished by the field, the workshop, or the home, would prove the most suitable for developing the child's intelligence and aptitudes and for enabling him to derive the utmost advantage from attendance at any one of the different types of secondary schools best fitted for his ascertained abilities and knowledge. The bent of the child's intellect would be fully determined before the age when the earliest specialization would be desirable. No scheme of instruction for primary schools can be regarded as satisfactory which is not so arranged that, whilst providing the most suitable teaching for children who perforce must enter some wage-earning pursuit at the age of fourteen or at the close of their elementary school course, shall at the same time afford a sound and satisfactory basis on which secondary and higher education may be built. And I hold the opinion, in which I am sure all teachers will concur, that a scheme of primary education pervaded by the spirit of the kindergarten, which by practical exercises encourages observation and develops the reasoning faculties, and creates in the pupil an understanding of the use of books, would form a fitting foundation for either a literary or a scientific training in a secondary school.

I have purposely chosen to illustrate the main subject of this address by reference to defects in our primary instruction, because the success of our entire system of education will be found, year by year, to depend more and more upon the results of the training given in our public elementary schools. We have scarcely yet begun to realize the social and political effects of the momentous changes in our national life, consequent on the first steps which were taken less than forty years ago to provide full facilities under State control and local management for the education of the people.

Educate our Masters.

At present all sorts of ideas are afloat which have to be carefully and scientifically considered. The working classes have to be further and somewhat differently educated, in order that they may better understand their own wants and how they are to be satisfied. We have placed vast powers in the hands of local bodies, popularly elected—powers not only of administration, for which they are well adapted, but powers of determining to a very great extent, by the free use of the rates, the kind of instruction to be given in our schools, and the qualifications of the teachers to impart it. Moreover, these local bodies have shown, in many instances, a distrust of expert advice and a desire to act independently as elected representatives of the people, which cannot fail for some time at least to lead to waste of effort and of means. It was said years ago, when the centre of our political forces received a marked displacement, that we must educate our masters. Our masters now, both in politics and in education, are the people, and it is only, I believe, by improving their education that we can enable them to understand the essential difficulties of the problems which they are expected to solve, and can induce them to rely, to a greater extent than they do at present, on the results of the application to such problems of scientific method, founded on the fullest information obtainable from historical and contemporary sources.

The Higher Education.

I might have illustrated my subject by reference to the acknowledged chaotic condition of our secondary education. In the report of the Board of Education published in December last we read: "While the development of secondary education is the most important question of the present day, and is the pivot of the whole education, as it affects the efficiency, intelligence, and well-being of the nation, yet its present position may be described as 'chaos.'" The "chaos" by which the present position of our secondary education is here described is intimately connected with the questions relating to primary education which I have been engaged in considering. If we construct a system of primary education which serves equally for children of all classes, apart from social conditions—a system educationally sound both as a preparation for immediate wage-earning pursuits and for more advanced and somewhat more specialized training in a secondary school, many of the difficulties which confront the Board of Education, and which are largely of an administrative order, would disappear. The difficulties are in part dependent on the question of curriculum, to the discussion of which a day will be devoted during the present meeting.

University education in this country, and indeed in other countries, has also suffered much from the hands of the unscientific reformer. In Germany, owing to many causes, the higher education has made considerable advances during the past century; but even in that country a more critical study of the development of university education and a truer recognition of the twofold function of a university might have prevented the early separation in distinct institutions and under separate regulations of the higher technical from university instruction. Only within recent years has France retraced her steps and returned to the university ideal of seven centuries ago. But perhaps the climax of unscientific thinking was reached in the scheme, happily abandoned, of founding a new university in Dublin on the lines suggested by Mr. Bryce in his now famous speech of January last.

Our conception of the functions of a university has undergone many violent changes. Between the ideal of the University of London prior to its reorganization and that of a mediæval university, in which students were never plucked, obtaining their degrees whether they did their work well or badly, there have been many variations; but I think it may be said that, recently at any rate, we have come to realize the fact that our universities, to fulfil their great purpose, must be schools for the preparation of students for the discharge of the higher duties of citizenship and professional life, and institutions for the prosecution of research, with a view to the promotion of learning in all its branches, and that examinations for degrees, necessary, as they undoubtedly are, as tests of the extent of a student's acquired knowledge, must be regarded as subordinate to these two great functions.

Conclusion.

I will not detain you longer. I have endeavoured to show under what limitations education may lay claim to be included among the sciences, and how a knowledge of the history of education and the application of the methods of scientific inquiry may help in enabling us to solve many of the intricate and complicated questions which are involved in the establishment on a

firm foundation of a national system of education. I have taken my illustrations mainly from the reform of elementary, or, as I prefer to call it, "primary," education, and I have sought to indicate some of the errors into which we may fall when we fail to apply to the consideration of the problem the same principles of inductive inquiry as are employed in all investigations for the attainment of truth.

I believe that this Section of the British Association has the opportunity of rendering a great service to the State. Numerous educational societies exist in which questions of importance are discussed, and all, perhaps, do useful work. But none is so detached from separate and special interests; none stands so essentially apart from all political considerations; none is so competent to discuss educational problems from the purely scientific standpoint as are the members of this Association. If, in the remarks I have offered, somewhat hastily prepared under the pressure of many different kinds of work, I have contributed anything to the solution of a problem the difficulty and national importance of which all will admit, I shall feel that I have not been altogether unworthy of the honour of occupying this chair.

EDUCATION AND EVOLUTION.

By the Rev. A. E. Crawley, M.A., Head Master of Derby School.

Though the literature of education during the last fifty years has been voluminous, the problems of education have never been examined on a sufficiently large induction of facts, and the biological and evolutionary point of view has been entirely ignored.

The principles which underlie the education of to-day are entirely unsatisfactory: they are fortuitous, traditional, or opportunist. (1) The curriculum is overcrowded with subjects; many of these are not educational, in the proper sense, for real life. (2) The results are *nil*: vulgarity, squalor, obscenity, hooliganism seem to increase with the education of the lower orders, while general capacity and power of thought have not increased.

Individuality is actually destroyed. From a study of the subject in its anthropological and psychological aspects, and from a long practical experience of teaching, it would appear that—

1. The education of a savage child is at once practical and liberal, and offers valuable lessons for our purpose.

2. Education should make not good workmen, clerks, or citizens, but men.

3. The biological significance of childhood is all-important: the child represents the future of the race in two senses of the phrase. The superficial and immediate meaning is obvious, but the other and deeper meaning, which is not generally understood, is that in terms of evolution the child is higher in the scale of development than the adult, just as the infant ape is much nearer to man than the adult ape.

4. The importance of physical culture and athletics is not sufficiently understood. The neuro-muscular system is at present either not exercised or exercised improperly or overworked.

5. We ignore the delicacy of children's nerves. Especially fatal is the fallacy of brain exercise: the brain is not a muscle. To venture on a paradox, there should be no work at all in schools. Mental fatigue is daily forced upon children, to their incalculable injury.

6. Subjects of curriculum. Two prime needs: (1) The encouragement of the imagination, which in childhood is actually at its best; (2) the exclusion of useless subjects.

Useless subjects will not pass the following tests:—(*a*) A child must learn the world of Nature and, later, of men as we now know it. This means Nature study and science generally. It must learn the various aspects in which a thing is knowable—surface, area, form, numerical values. Only so much mathematics is necessary as is required to work with science and mechanics. (*b*) It must know itself. (*c*) It must learn to express its knowledge and co-ordinate it.

Some details: History in the ordinary sense is useless, but biological and evolutionary history is essential.

No languages other than the vernacular are to be learned. The old plea of "culture" involves many fallacies. Culture comes from luxury and refinement of surroundings; it cannot be taught, and its only importance is in the æsthetic side of life.

As to the plea of "formation of character," there are many fallacies enshrined in this and in the ordinary conception of duty.

Ideal teaching should be the answering of children's questions in terms of the knowledge already acquired by themselves.

CONDITIONS OF SCIENCE WORK IN SECONDARY SCHOOLS.

By R. E. Thwaites, M.A., Wyggeston School, Leicester.

In a paper on "The Internal Economy of School Science," read before the Public School Science Masters' Association in January, 1907, figures were presented relating to conditions of science work in 36 public schools. More recently similar data have been obtained from about the same number of secondary schools working in conformity with Board of Education Regulations.

In both cases information was asked for on the following points:—Number of boys taking science in (1) general course, (2) special course; average number in class; number of hours per week for (1) general course, (2) special course; number of science masters; number of laboratory assistants; approximate annual expenditure for science; and answers to the following questions:—Do you consider your present arrangements to be adequate in respect of (1) laboratory accommodation, (2) laboratory equipment, (3) staff, (4) laboratory assistants?

The average results may here be given:—

Public Schools.—In 29 schools 60 per cent. of the boys take science; in 23 of these the average percentage of boys in the general course is 95, the remainder being specialists. The number in class for 27 schools is 21·5 in the general, and 14 in the special course. The time for the general course is 4 hours a week, usually divided between chemistry and physics; and, for the special course, 12 hours. In 18 schools the annual expenditure per boy was about £1. Chemistry costs more than physics for maintenance. In 23 schools there is a science master for every 76 boys, and a laboratory assistant to every 147 boys. 65 per cent. of the correspondents were satisfied with their laboratory accommodation, 71 per cent. with equipment, 77 per cent. with the number of the staff, and only 58 per cent. with laboratory assistants.

Secondary Day Schools.—All boys above 12 years of age take science. The percentage of boys in the general course, lasting 4 years, is 94; in the special course, 6. The average number in class in the general course is 22·6; in the special course, 8 or 9. The number of hours for science in the general course is rather over 4 a week, and in the special course from 8 to 15. The work is usually divided between chemistry and physics; very little biology is taught. The annual expenditure per boy for apparatus and chemicals is 8s. 6d., or 2s. for 1 hour of science a week. The average number of boy hours a week for one science master is about 310. There is one laboratory assistant to 218 boys. 90 per cent. of the correspondents are satisfied with their staff, 77 per cent. with laboratory accommodation, 80 per cent. with laboratory equipment, and 50 per cent. with laboratory assistants.

It will be seen that the ratio of specialists to boys in a general course is roughly the same in the two classes of schools. In the matter of expenditure the day schools are markedly inferior to public schools. In both there are too few laboratory assistants. The consequences of this misguided economy are that the time of the science master is wasted in drudgery which could be performed less expensively by an assistant, and opportunity for preparation of experiments is lacking.

In answer to the question: "What do you consider to be the maximum size of a laboratory division for successful work?" the average reply from 30 schools was: 20 boys in the lower classes, 12 in the higher. It need not be said that these figures still represent only a pious aspiration in many cases.

Another question addressed to the same schools related to the advisability of teaching experimental mechanics as part of the science course. The answers showed a strong feeling of the value, and even necessity, of such a course as a preliminary to all advanced work in physics.

It is hoped that this report, fragmentary as it is, may be of some use to educationists and those interested in the supply of secondary education, as indicating the present conditions under which science work is prosecuted in public schools and the better class of secondary day schools.

TYPES OF PHYSICAL DEVELOPMENT IN SCHOOLS.

By Cecil Hawkins, M.A., Haileybury College, Herts.

What the schoolmaster requires from a system of physical measurements is an easy means of discovering whether individuals or groups of individuals are thriving or the reverse.

A good rough estimate of the manner in which a boy is thriving can be formed by comparison of periodic measurements of his height and weight. In order that the lesson to be learnt from these observations may be sufficiently obvious a system of grades is required. Comparison with the rate of growth of the mean boy is unsatisfactory; a high-grade boy of 14 will normally grow twice as fast as a low-grade boy, while at 18 the low-grade boy should be growing twice as fast as the high-grade boy.

I have used for some years a set of tables by means of which the height and weight of all boys observed may be referred to one or other of 20 grades—all equally probable—of which grade 1 is the highest. The record of a boy's growth can conveniently be kept upon a form divided by parallel lines into 20 spaces to represent the 20 grades, separate graphs being drawn for height and weight. These graphs will be fairly level in rather more than 50 per cent. of the cases observed. In the majority of the remaining cases periods of steady rise or fall will be noted in which the two graphs, as a rule, remain fairly parallel. In some cases the graphs are very irregular, constant fluctuations being apparent. In such cases the fluctuations in the two graphs are generally found to correspond.

Consecutive observations will give the same grade in about 50 per cent. of the cases observed. The graph normally rises in 25 per cent. and falls in 25 per cent., speaking roughly. Any disturbing cause will alter these proportions in a group affected by it—*e.g.*, in a school in which observations are recorded in March, June, and October or November I found that in the various intervals the percentages were:—

In Height.

	Up.	Level.	Down.
March to June	25·4	53·0	21·6
June to October	33·1	45·7	21·2
November to March	14·2	47·3	38·6

In Weight.

	Up.	Level.	Down.
March to June	33·5	41·2	25.4
June to October	35·9	41·6	22·7
November to March	24·4	37·6	38·0

Variations in chest girth are far more marked than those in height and weight, the chief disturbing factor being systematic physical training. Thus, of 225 Haileybury boys—taken as they came—who were measured on entrance, and again after three terms of compulsory physical training, 1 boy improved 15 grades in chest girth, 3 boys 13 grades, 4 boys 12 grades; 12 per cent. had gone down from 1 to 5 grades, 14 per cent. were level, 50 per cent. had improved from 1 to 5 grades, 15·5 per cent. from 5 to 10 grades, and 8·5 per cent. had improved more than 10 grades.

Typical schemes of development may be arrived at by working out the average grades of the type required: *e.g.*, *Typical athletes* grade at 18·9 in height, 5 in chest girth, 3 in weight, and are early developed; *typical gymnasts* grade 13 in height, 7 in weight and chest girth, the grade of height being very uniform throughout their scheme of growth; *typical scholars* grade 9 in height and chest girth, 7 in weight. The importance of weight as a sign or factor of vigour is very marked.

For general use I would urge that a system of percentile grades be adopted, which should include all classes of the population. In order to construct such a system we require a large number of accurate observations, which must include children of all ages, subject to every variety of condition as regards nurture and environment.

SECONDARY SCHOOLS CURRICULA.

Sir Oliver Lodge submitted the report of a Committee appointed at the York meeting to consider and advise as to the curricula of secondary schools; in the first instance, the curricula of boys' schools.

The Committee submitted for consideration the following conclusions:—(1) There was need for secondary schools of different types, with different curricula or combinations of curricula, because (*a*) all boys were not suited to the same course of study; (*b*) the requirements of the various callings upon which the boys would subsequently enter differed considerably; (*c*) the needs of the schools differed in a considerable degree according to the economic conditions of the districts in which they were situated. (2) The Committee considered that one modern foreign language should in all cases be begun at an early age, but were of opinion that it would be a wise educational experiment to postpone the systematic teaching of Latin as an ordinary school subject till twelve years of age, and that such a change would prove sufficiently successful to warrant its adoption. (3) The Committee deprecated any form of early specialization in the education of children, and therefore regarded with grave concern the fact that the entrance examinations at the great English public schools gave undue prominence to the study of Latin (and Greek) in the course of education at the preparatory schools, the result being that too little time was available for (*a*) the teaching of the mother tongue, (*b*) manual training, (*c*) science and mathematics. (4) The Committee would deprecate anything like State-imposed rigidity in the organization and studies of secondary schools; but the Committee was led to the conclusion that up to twelve years of age there might be a broad general course of education for all. It would in all cases include careful preliminary training in the use of the mother tongue, so that it could be used in speaking and writing correctly on ordinary occasions, and would further comprise the following divisions:—(1) Literary, (2) Mathematical, (3) Scientific, (4) Manual Training. The Committee would urge upon the universities and professions to accept as qualifying for entrance the leaving certificates granted by each university to the schools which submit to its inspection.

THE ESPERANTO CONGRESS.

From Saturday, August 10 to 15, Cambridge was the scene of a memorable gathering. The Esperanto Congress was attended by some fifteen hundred persons, including delegates from France, Belgium, Holland, Switzerland, Germany, Austria Hungary, Bohemia, Moravia, Russia, Poland, Siberia, Norway, Sweden, Denmark, Iceland, Italy, Spain, Catalonia, the United States of North America, Uruguay, Venezuela, England, Scotland, Ireland, Canada, Malta, Gibraltar, and Tunis. Cambridge received her visitors with open arms. The town was *en fête*. The banner of Esperanto-land, the green star on a white ground, flew from every flagstaff. The Lord-Lieutenant of the county, the Mayor of the city, and the Vice-Chancellor of the University received Dr. Zamenhof, the framer of the language, and his followers in the Fitzwilliam Museum and in the beautiful garden of the Fellows of King's College. Esperanto was heard in the Guildhall, in the college courts, on the river, in the shops, and in the streets, spoken not only by the visitors, but by many of the inhabitants, including Sergeant Gates, of the Police.

That Esperanto has proved itself a thoroughly efficient means of communication between people of different countries who do not understand each other's language, no one who attended the congress can for a moment doubt; that it is easily learned when a sufficient inducement exists has also been clearly demonstrated; that the number of adherents is increasing in geometrical ratio is shown by the published statistics. What of its educational value?

Probably the most important fact connected with the Congress is the adhesion of Dr. Mayor, Cambridge's venerable octogenarian Professor of Latin. After some six days' study of the language, Dr. Mayor delighted the Congress by avowing himself an Esperantist, and addressing the members in the international language. He pointed out that it was the greatest mistake to suppose that Esperanto was in any sense the foe of other languages; on the other hand, it was the best possible introduction to them. He was of opinion that, even at as early an age as five, children might learn Esperanto; and that, having in this easy way surmounted the first difficulty and learned the meaning of the principal roots which occur in the common words in Latin, French, German, &c., through their use in Esperanto, the child would far more easily and willingly learn other languages.

There is a great deal to be said for this view. We all know how much easier it is for a person who already knows one or two foreign languages to learn another: then why not begin with the easiest?

The two points in Esperanto which some English people find difficult are the use of the letter *n* to indicate the accusative case, and the fact that adjectives, like towns, take the terminations of the accusatives and the plural. But these are the very things which enable Esperanto to act as a valuable intermediate step between English and inflexional languages. These points once mastered through Esperanto, it will be a far easier task to apply them to corresponding constructions in Latin, French, German, and other languages. Even in the matter of pronouncing foreign languages a previous study of Esperanto is a great help. And there is this great point, to which the writer can testify by personal observation, that children like learning Esperanto.

J. Blaikie, M.A., F.B.E.A.

REVIEWS.

Tacitus.

The Annals of Tacitus. Edited, with Introduction and Notes, by Henry Furneaux. Vol. II.: Books XI.–XVI. Second Edition, revised by H. F. Pelham and C. D. Fisher. With a Map. (21s. Clarendon Press.)

Furneaux's edition of the "Annals" is too well known and appreciated to require more than simple announcement of the new edition of the second volume. The treatment is historical and critical, and the work of revision has been divided between an historical and a critical expert. The historical revision could not have been placed in more competent hands than those of the late Prof. Pelham, who fortunately had completed his task just before his death. The labour of testing the historical matter contained in the very ample introductions and scattered through the notes has evidently been very heavy, and it can be estimated only by an examination in detail, for passages are silently omitted, and it is only the more important additions that are marked by brackets and initials. The introductory historical chapters, occupying (with numerous references and criticisms in footnotes) 150 pages, are most ample and valuable summaries. Of the smaller discussions and summaries placed in appendixes to several of the chapters, we would remark on one only—that on the Neronian persecution of the Christians. We confess to considerable surprise that no mention whatever is made of Mr. Hardy's most able, careful, and valuable monograph on "Christianity and the Roman Government," to which the student will turn with advantage after he has exhausted both the Appendix and the notes on the passage in the text. Mr. Fisher has been relieved of much labour by the adoption of the text of the "Oxford Classical Texts." Still, he has had not only to readjust the notes to this text, but also to examine them all in the light of later knowledge, and here again the labour is silent, except in the case of important additions. Both revisers have sought to preserve the broad characteristics of the original work, and have made alterations or suggestions only on the strength of new information. Here and there, as usual in classical commentaries, one feels a lack of precision on legal points, though the references will generally supply the remedy. Occasionally, too, there is room for difference of opinion. For example: in "velut consilio" (page 311, Ann. XIV. 62 fin.) "velut" does not, we think, imply "that the process was a sham," though it may, in fact, have been a sham on the particular occasion. But the scholarship generally is thoroughly competent. The loyalty and modesty of the revisers will not go unrewarded in the judgment of scholars. The indexes are full and most serviceable; and the map of Armenia and the surrounding countries is convenient and helpful. The work, of course, is indispensable to students of the "Annals."

The Teaching of Mathematics.

The Teaching of Mathematics in the Elementary and the Secondary School. By J. W. A. Young, Ph.D. (Longmans. 6s. net.)

Writing for the "American Teachers Series," the author addresses himself to those already engaged in the teaching of mathematics in the elementary and secondary schools as well as to students preparing for similar work. To all readers of English belonging to either of these classes, it may be said that they will do well to study the volume: it should be a fruitful source of inspiration. The author is thoroughly qualified by his professional knowledge and experience to deal with his subject, and he treats it in an interesting and very suggestive manner, giving, moreover, copious references to allied literature. He investigates in succession these important topics: why we should study the art of teaching at all, why we should teach mathematics in our schools, how we should teach the subject with regard both to the method of arrangement of the matter taught and to the mode of imparting it, what is the desirable equipment of the school for the purposes of the mathematical work, and what mathematics we should teach and in what order. Further, he discusses at some length the teaching of the earlier portions of various branches of the science—arithmetic, geometry, algebra, trigonometry, and the principles of limits. The first of the above topics obviously needs only a brief consideration, and is soon dismissed. The educational value of mathematics constitutes the theme of an able inquiry, in the course of which the author frankly states the views held by such thinkers as Sir William Hamilton. In reply to these he forcibly argues that mathematics, defined by Peirce as "The Science of Necessary Conclusions," provides an invaluable first training in the habit of thought which enables the individual in any career of life to select suitable working hypotheses, to draw from them the necessary inferences, and then to allow wisely for the contingent nature of the conditions involved.

From the point of view of the character of the information acquired by its study, the value of mathematical science as a part of the school curriculum is also made evident, and amongst the other *desiderata* which render the pursuit of the subject beneficial are the cultivation (1) of a reverence for truth, (2) of the æsthetic sense, (3) of habits of neatness and accuracy. Passing next to the consideration of how to teach mathematics, Dr. Young enumerates and details the principal "methods" of dealing with the subject matter and the chief "modes" of imparting it, both those which prevailed in the past and those which are now being recommended as superior. Broadly speaking, the "modes" may be divided into those, on the one hand, which consist in putting ready-made facts into the pupil's mind either by encouraging rote-learning from text-books or by lecturing to a class, and those, on the other hand, which aim at the rediscovery by the class or the individual of the subject under consideration. That the latter type of instruction is more in harmony with the ideals of education few will deny. The author is slow to condemn utterly any "mode," and counsels a wise fusion of the best principles of nearly all; and one is tempted to suggest the analogy offered by the anecdote of the negress who, when pressed to name the proportionate quantities of the varied ingredients of her famous salads, replied, in the case of each, that just the right quantity must be put in the mixture. Special chapters are devoted to explanations of the "heuristic" and the "laboratory" methods respectively, of which the latter, closely associated with the name of Prof. Perry, connotes the ideas for improved teaching which have sprung from the reform movements in England and America. The leading aim of the "heuristic method" is to secure as far as possible the rediscovery of the subject by the pupil. There are some who, whilst acknowledging the essential value of such original work, object that the necessary time for the course is too long, and that the greatest mathematicians freely profit by the work of their predecessors in the field. The criticism is valid, and for the success of the "heuristic" teaching it is essential that the teacher be able and always at hand at the right moment to supply the place of legitimate aids to discovery. Amongst the leading principles of the "laboratory" method are the following:—Arouse interest by every means possible; teach the subjects in relation to each other and not as if they had no mutual influence; combine induction and experiment with deduction; argue from the concrete to the abstract, defining as concrete whatever has become the "thoroughly mastered intellectual property of the pupil"; allow more elasticity in the methods of proof. The doctrine is excellent, but again the successful application is subject to limitations. For the best results, the properly equipped laboratory and library are requisite, and the question of expense in the case of smaller schools is a serious one. Still, it may always be remembered that it is better to aim at the highest, even when success can only be partial. Leaving the subject of "methods" and "modes," the author next treats of the curriculum and its arrangement, and finally he discusses the principles of teaching as applied to special branches of mathematics. Into the details of these sections it is impossible to enter here; but enough, it is hoped, has been said to induce readers to consult the volume at first hand.

The Romantic Movement in Europe.

The Romantic Revolt. By Charles Edwyn Vaughan, M.A. Oxon., Professor of English Literature, University of Leeds. (5s. net. Blackwood. Periods of European Literature, Vol. X.)

Prof. Vaughan deals with a comparatively limited period—the last quarter of the eighteenth century and the first few years of the nineteenth, or, if we take literary dates, from the death of Voltaire and Rousseau (1778) to the death of Schiller (1805). The title of the volume must not be pressed too closely:

With the middle of the eighteenth century a great change began to make itself felt in the thought and literature of Western Europe—a change from the spirit of criticism to that of creation; from wit to humour and pathos; from satire and didactic verse to the poetry of passion and impassioned reflection; above all, a change from a narrow and cramping conception of man's reason to one far wider and more adequate to his powers. This change may be conveniently

summed up in one phrase: the Romantic Revival, or, if our object be to lay stress on its negative aspect, the Romantic Revolt. But no such phrases can serve as more than a rough index. And it must be understood, on the one hand, that some few writers stand altogether apart from the general movement of the time; and, on the other hand, that behind the apparent unity of that movement several distinct tendencies were at work.

The term "Romantic" is used in different senses, sometimes widely apart and sometimes shading into each other. The root fact is the same, however, and the term is established; and Prof. Vaughan takes care that the reader shall make no mistake in the matter. The whole book is disposed in four chapters. The first, which is devoted to the romantic movement in Britain, occupies just one third of the space. Prof. Vaughan marks in firm lines the nature of the impulse given to the romantic revival, both in this country and on the Continent, by Macpherson's "Ossian" and Percy's "Reliques of Ancient English Poetry." He then traces the gradual growth of the reaction against the ideals and methods of classical poetry in the principal writers; passes on to the drama, the novel, and the lighter forms of verse; tackles the history of political discussion (notably Burke and Bentham), of literary criticism, and of oratory (Fox, somewhat inadequately); and notes generally the immense advances in learning and in natural science. The second chapter, which is even somewhat longer than the first, is devoted to Germany. Here Prof. Vaughan drops the minor writers more freely, confining himself almost entirely to a few great authors (Lessing, Herder, Goethe, Schiller, Kant), yet indicating sufficiently the contributions of minor writers to the development of these, and, conversely, the influence of the greater writers upon their successors.

The third chapter is occupied with France and Italy. "The Latin countries were far more deeply in bondage to the classical tradition than either Germany or England; and it was much later before they were captured by the romantic movement": hence a more limited treatment. "The clearest sign of the romantic dawn is perhaps to be seen in the repeated efforts made during this period to naturalize Shakespeare" in France, especially by Letourneur and Ducis. Rousseau's influence "was by far the most fruitful at work during the whole of this period"; and André Chénier, Chateaubriand, and Madame de Staël lead the way in the revival. The Italian results are strong in promise rather than in performance: "the one man of genius whom the period produced was decisively classical in his bent"—Alfieri. The final chapter glances at the other countries of Europe, simply "indicating the main currents of thought and feeling, the general drift of literary activity, in each." Throughout the treatment of each group influences from other groups are pointedly noted. The selection and disposition of the vast mass of materials are judicious and lucid; and the style, if careless of the niceties of the school, and somewhat tolerant of superlatives, is spirited and vigorous. The general impression is most favourable; and the volume will be a very useful and suggestive guide to the student of the most interesting and important movement it describes.

GENERAL NOTICES.

MATHEMATICS.

A College Algebra. By Henry Burchard Fine. (6s. 6d. Ginn.)

The Professor of Mathematics, Princeton University, puts before his readers a close and very valuable investigation of the theory of algebra and its application to the solution of examples and problems. The treatise covers all that the school or college student is likely to require throughout his training; but, seeing that no course suitable for a first reading is outlined, the volume, unless used under the best guidance, is not likely to prove as useful to the ordinary as to the advanced reader. The work is divided into two parts. The first part considers in detail the principles on which our algebraical number system is based, developing the subject in accordance with the views of Rowan Hamilton, Grassmann, Helmholz, Dedekind, and Georg Cantor. The treatment of the theory of the various algebraical operations is more than usually satisfactory in some respects. Thus, for example, when discussing the laws which govern the combination of signs, the writer commences by giving as *definitions* the rules of combination and then establishes the harmony existing between these definitions and the fundamental laws of algebra. The sequence adopted in the second division of the work—the section which bears a closer resemblance to the general school or college text-book—differs to some extent from the order usually followed. The chosen arrangement offers important advantages, and the changes have been introduced for the purpose of securing a more logical treatment. As will be anticipated, the discussion of ordinary methods, under their various headings, is interesting and thorough.

Clive's Mathematical Tables. (University Tutorial Press.)

A compact series of tables clearly printed and carefully arranged with a view to ensuring ease and accuracy in the use of them. They include the usual tables of logarithms and antilogarithms, tables of the natural values of the trigonometrical functions, and the corresponding logarithmic tables. The various functions are calculated to five places of decimals, and means of correction are supplied so that even in the case of complicated pieces of work the results may, as far as possible, be true to four places. An explanation of the use of the tables is added and accompanied by sets of exercises, to which the answers are furnished.

The Leader Arithmetic. By George Merchant. In 6 Parts, 3d. each; Answers, 2d. each. (Nottingham: the Author. London: Simpkin, Marshall, & Co.)

The explanations are simple and clear, and they are exemplified in adequate variety by worked examples. The exercises, which are very numerous, have been carefully graduated: this feature is pointed to in the title "Leader." While suitable for elementary schools and the lower forms of other schools, the series is specially intended for children leaving school at fourteen or fifteen years of age. A laborious and serviceable compilation.

SCIENCE.

Dent's Series of Mathematical and Scientific Text-Books for Schools. Edited by W. J. Greenstreet, M.A., F.R.A.S. (1) *An Introduction to Practical Botany.* By E. H. Davies, B.Sc. Lond., F.G.S., County School, Barry, Glamorganshire. 2s. (2) *A First Statics.* By C. S. Jackson, M.A. Cantab., Instructor in Mathematics, R. M. Academy, Woolwich, and R. M. Milne, M.A. Cantab., Assistant Master, Royal Naval College, Dartmouth. (4s. net.)

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Bacon: Essays set for the Certificate Examination, 1908. (1) Edited by David Salmon, Principal of Swansea Training College. 1s. 9d. Ralph, Holland, & Co. (2) Edited by R. Oswald Platt ("Selections from Bacon's Essays — Second Series"). 1s. Macmillan. (3) Edited by A. F. Watt, M.A. Oxon., and S. E. Goggin, B.A. Lond. 6d. Clive. (4) Edited by W. Raybould, B.A. Lond., Lecturer at Finsbury Pupil-Teacher Centre. 1s. net. Normal Press.

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MATHEMATICS.

Note on the Empirical Rule of Mr. SARADAKANTA GANGULI, M.A.

By Professor SANJÁNA, M.A.

A better approximation is given by the following method, which also explains the rule. By the ordinary formula, $M = P(1+r/100)^n$; here $M = 3P$; so that $3 = (1+r/100)^n$. Therefore we get

$$n\left(\frac{r}{100} - \frac{1}{2}\frac{r^2}{100^2} + \frac{1}{3}\frac{r^3}{100^3}\cdots\right) = 1{\cdot}0986;$$

i.e., $$nr\left(1 - \frac{1}{2}\frac{r}{100}\cdots\right) = 109{\cdot}86 = 110 \text{ (very nearly)}.$$

Thus $$nr = 110\left(1 - \frac{1}{2}\frac{r}{100}\right)^{-1}\text{(approximately)} = 110\left(1 + \frac{1}{2}\frac{r}{100}\right);$$

so that $$n = \frac{110}{r} + {\cdot}55.$$

When $r = 1, 2, 3, 4$, $n = \frac{110{\cdot}55}{1}, \frac{111{\cdot}1}{2}, \frac{111{\cdot}65}{3}, \frac{112{\cdot}2}{4}$ respectively.

Again $$r = \frac{110}{n - {\cdot}55} = \frac{110}{n} + \frac{60}{n^2} \text{ (roughly)};$$

whence, n being given, r may be calculated. Similar rules may be constructed for doubling, quadrupling, &c., the principal, using natural logarithms.

Note on Expansion in Series.

By S. NARAYANA AIYAR.

Let $f(x)$ be capable of expansion in powers of x and be equal to $a_0 + \Sigma a_n x^n$. Then

$\frac{1}{2}[f(x+iy) + f(x-iy)]$ or $C(x, y) = a_0 + \Sigma a_n (x^2+y^2)^{\frac{1}{2}n} \cos n \tan^{-1} y/x$,

and

$1/2i\,[f(x+iy) - f(x-iy)]$ or $S(x, y) = \Sigma a_n (x^2+y^2)^{\frac{1}{2}n} \sin n \tan^{-1} y/x$.

These can be proved as follows:—substitute successively $x+iy$ and $x-iy$ on both sides for x; add or subtract, as the case may be, and divide by 2 or $2i$. Then the n-th term in dexter is

$$\tfrac{1}{2}a_n[(x+iy)^n + (x-iy)^n] \quad \text{or} \quad (1/2i)\,a_n[(x+iy)^n - (x-iy)^n],$$

which, by De Moivre's theorem, reduces to

$$a_n(x^2+y^2)^{\frac{1}{2}n} \cos n \tan^{-1} y/x \quad \text{or} \quad a_n(x^2+y^2)^{\frac{1}{2}n} \sin n \tan^{-1} y/x,$$

as the case may be.

By the application of the above theorem many elegant results in expansions can be established. For example:—

(1) If $f(x) = \sin x = \sum_{n=0}^{n=\infty} \frac{x^n}{n!} \sin \frac{1}{2}n\pi$, then

$$C(x, y) = \sin x \cosh y = \Sigma \frac{(x^2+y^2)^{\frac{1}{2}n}}{n!} \sin \tfrac{1}{2}n\pi \cos n \tan^{-1} y/x,$$

$$S(x, y) = \cos x \sinh y = \Sigma \frac{(x^2+y^2)^{\frac{1}{2}n}}{n!} \sin \tfrac{1}{2}n\pi \sin n \tan^{-1} y/x.$$

(2) If $f(x) = \cos x = \sum_{n=0}^{n=\infty} \frac{x^n}{n!} \cos \frac{1}{2}n\pi$, then

$$\left.\begin{aligned} C(x, y) &= \cos x \cosh y \\ S(x, y) &= -\sin x \sinh y \end{aligned}\right\} = \sum_{n=0}^{n=\infty} \frac{(x^2+y^2)^{\frac{1}{2}n}}{n!} \cos \tfrac{1}{2}n\pi \begin{matrix}\cos\\ \sin\end{matrix} n \tan^{-1} y/x.$$

(3) If $f(x) = \tan x = \Sigma \frac{2^{2n}(2^{2n}-1)}{(2n)!} B_{2n-1} x^{2n-1}$, then

$$\left.\begin{aligned} C(x, y) &= \frac{\sin 2x}{\cos 2x + \cosh 2y} \\ S(x, y) &= \frac{\sinh 2y}{\cos 2x + \cosh 2y} \end{aligned}\right\}$$

$$= \Sigma \frac{2^{2n}(2^{2n}-1)}{(2n)!} B_{2n-1} (x^2+y^2)^{\frac{1}{2}(2n-1)} \begin{matrix}\cos\\ \sin\end{matrix} (2n-1) \tan^{-1} y/x.$$

(4) $f(x) = \cot x = 1/x - \Sigma \frac{2^{2n}}{(2n)!} B_{2n-1} x^{2n-1}$.

$$\left.\begin{aligned} C(x, y) &= \frac{\sin 2x}{\cosh 2y - \cos 2x} \\ S(x, y) &= \frac{\sinh 2y}{\cos 2x - \cosh 2y} \end{aligned}\right\}$$

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$$= \frac{2}{x^2+y^2}\left\{\begin{matrix} x \\ -y \end{matrix}\right\} + \Sigma \frac{2^{2n}}{(2n)!} B_{2n-1} (x^2+y^2)^{\frac{1}{2}(2n-1)} \begin{matrix}\cos \\ \sin\end{matrix} (2n-1) \tan^{-1} y/x.$$

[In (3) and (4), B_{2n-1} is the n-th Bernoulli's number.]

[Rest in *Reprint.*]

A Demonstration of the Transcendental Character of the Function $e^{H(z)}$.

By F. TAVANI.

The function $e^{H(z)}$ has not a finite number of determined roots. For, if $e^{H(z)}$ has a finite number of roots (or zeros), let these be $a_1, a_2, \ldots, a_n$. We shall have then $e^{H(a_m)} = 0$ .....(1).

Now it is evident that all the possible zeros of $e^{H(z)}$ are not zeros of $H(z)$; therefore any possible root of $e^{H(z)}$ is the root of a function of the type $G(z)/H(z)$, and, dividing $e^{H(z)}$ by $G(z)/H(z)$, we clear $e^{H(z)}$ of some of its possible roots; and, if $e^{H(z)}$ has a finite number of roots, by applying this process a finite number of times (*e.g.*, n times), we shall obtain a function free of all of the roots in finite number of $e^{H(z)}$ having the form

$$[H(z)]^n/[G_1(z)\, G_2(z) \ldots G_n(z)]\, e^{H(z)},$$

or, for brevity, $L(z)\, e^{H(z)}$ .....(2),

so that $e^{H(a)} L(a) \neq 0, \quad e^{H(a)} = A/[L(a)]$ .....(3, 4).

The equation (4) shows that a is not a zero of $e^{H(z)}$, unless it is a pole of $L(z)$, and consequently of $H(z)$ also. Now there is an indefinite number of poles of $L(z)$, which are the poles of $H(z)$ and the roots of $\prod_{i=1}^{n} G_i(z)$; these roots are quite arbitrary, since the functions $G_i(z)$ are arbitrary, and may be chosen so as to contain an infinity of arbitrary roots, amongst which we have noticed to be the possible roots $a_1, a_2, \ldots, a_n$ of $e^{H(z)}$. Therefore, $e^{H(z)}$ if it is susceptible of a root a, is susceptible of an infinity of indeterminate roots also. It is well known that the poles of $H(z)$, which belong to the infinity of such roots, constitute essential singularities of $e^{H(z)}$.

If a is not a pole of $L(z)$, then the equation (4) shows that it is not a zero of $e^{H(z)}$ either, as it had been supposed in (1); and, in the same manner, any other quantity is excluded from being a root of $e^{H(z)}$.

In conclusion of these few remarks, it must be shown that it is not only the infinite number of roots—as it is suggested in some text-book on the theory of functions—that constitutes the character of transcendentality; but their infinity accompanied by their indeterminateness, and by virtue of both these characteristics, and not of the first one only, they are analytically representable by a function possessing the factor $e^{H(z)}$, or, what is the same, they possess an essential singularity, which constitutes the differential character of transcendental functions from algebraical ones.

16101. (Professor NEUBERG.)—Soient A′, B′, C′, D′ les projections des sommets A, B, C, D sur un plan quelconque. Démontrer que les perpendiculaires abaissées des points A′, B′, C′, D′ respectivement sur les faces BCD, CDA, DAB, ABC du tétraèdre sont quatre génératrices d'un même hyperboloïde.

Solution by Professor NANSON.

Let $\alpha, \beta, \gamma, \delta$ be the perpendiculars from A′, B′, C′, D′ on the faces a, b, c, d of ABCD. Draw through D′ planes x, y, z parallel to a, b, c. Then the planes D′α, D′β, D′γ, being perpendicular to a, b, c, are also perpendicular to x, y, z, and are therefore collinear (these planes pass also through the edges of the trihedral angle formed by a, b, c) because the three perpendiculars of a spherical triangle are concurrent. Thus the four $\alpha, \beta, \gamma, \delta$ all intersect a line through D′. Similarly they all intersect lines through A′, B′, C′, and are therefore generators of the same hyperboloid.

16212. (W. J. GREENSTREET, M.A.)—Find the locus of the feet of the perpendiculars from the origin to the normals to Bernoulli's lemniscate.

Solution by Professor W. H. H. HUDSON, M.A.

The solution printed is wrong. There seems to be a confusion as to the meaning of α; α is not defined.

If α be the angle vector of the point at which the normal is drawn, referred to the centre and transverse axis, length $2a$, of the rectangular hyperbola of which the lemniscate is the inverse and the pedal with respect to the centre, r, θ co-ordinates of the foot of the perpendicular, we may deduce from the geometry of the figure

$$r^2 = a^2 \sin^2 2\alpha \cos 2\alpha, \quad \alpha - \theta = \tfrac{1}{2}\pi - 2\alpha;$$

whence the equation of the locus is

$$r^2 = a^2 \sin^2 \tfrac{1}{3}(\pi + 2\theta) \cos \tfrac{1}{3}(\pi + 2\theta).$$

16192. (G. Bool, B.A.)—Find the solution of

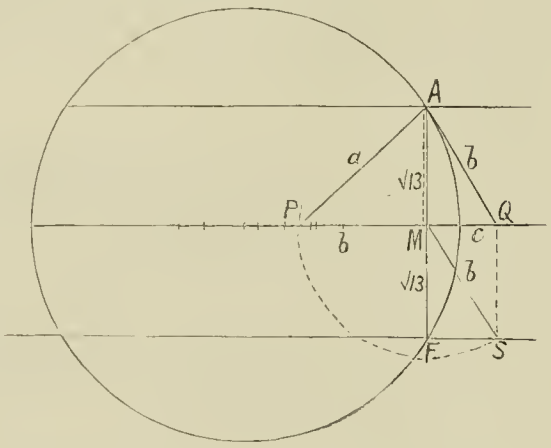
$$a^2-b^2 = b^2-c^2 = 13.$$

Solutions (I.) *by* Lt.-Col. Allan Cunningham, R.E.; (II.) *by* W. D. Roberts.

(I.) $a^2-b^2 = 13$, $b^2-c^2 = 13$ give $a^2-c^2 = 26$; whence $a = \mp 7\sqrt{2}$, $b = 6\sqrt{2}$, and $b^2 = \frac{1}{2}(a^2+c^2) = 85$, $b = \pm\sqrt{85}$.

Similarly, the solutions may be found of $a^2-b^2 = b^2-c^2 = \omega$ (an odd number), viz., $a = \pm\frac{1}{2}(\omega+1)\sqrt{2}$, $c = \pm\frac{1}{2}(\omega-1)\sqrt{2}$, $b = \pm\sqrt{[\frac{1}{2}(\omega^2+1)]}$. Also, if ω be composite, $= xy = \alpha^2-\gamma^2$, suppose, then every such resolution of ω into a difference of squares (α, γ) gives solutions $a = \pm\alpha\sqrt{2}$, $c = \pm\gamma\sqrt{2}$, $b = \pm(\alpha^2+\gamma^2)^{\frac{1}{2}}$.

(II.) We have $a > b > c$ numerically. By Euc. II. 14, draw $AM = \sqrt{13}$; produce AM to F so that $MF = \sqrt{13}$. Through A, M, and F draw parallels. Take any point P on the mid-parallel so that $MP > AM$. With centre M and radius PM draw an arc cutting the



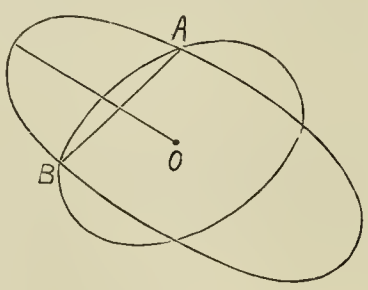
lower parallel at S; draw SQ parallel to AF; join AQ. Clearly $AP^2-PM^2 = 13$, and $AQ^2-MQ^2 = 13$; *i.e.*, $MS^2-MQ^2 = 13$ for $AQ = MS$; *i.e.*, $PM^2-MQ^2 = 13$ for $MS = PM$; therefore $AP^2-PM^2 = PM^2-MQ^2 = 13$, and, if $AP = a$, $PM = b$, $MQ = c$, then $a^2-b^2 = b^2-c^2 = 13$. The locus of P being the mid-parallel left from M, starting from a point distant $\sqrt{13}$ from M.

[Note.—The Editor remarks that evidently this gives only half of the locus, the other half being derivable by considerations of symmetry and from the second intersections of the variable circle with FS.]

16229. (Professor Nanson.)—Prove geometrically that two concentric conics have a pair of conjugate diameters in common, unless their asymptotes are real and interlaced.

Solution by M. T. Naraniengar, M.A.

If the conics cut in four real points, then, obviously, the common conjugate diameters are those bisecting the common chords. If the conics do not cut at all, it is possible to find a conic similar to one which shall cut the other or its conjugate in four real points. Hence also the problem is solved. If they cut in two real points only, their asymptotes are real and interlaced, and then the problem is not possible.



16203. (R. F. Scott, M.A.)—Find a solution of the system of n equations

$$\begin{array}{l} x_1-a_1 = x_2-a_2 = \ldots = x_n-a_n, \\ x_1,\ x_2,\ \ldots,\ x_n \quad = 0. \\ x_n,\ x_1,\ \ldots,\ x_{n-1} \\ \ldots \quad \ldots \quad \ldots \\ x_2,\ x_3,\ \ldots,\ x_1 \end{array}$$

Solution by A. M. Nesbitt, M.A., *and many others.*

A solution is evidently got from the $n-1$ equations

$$x_1-a_1 = \ldots = x_n-a_n \quad \ldots\ldots\ldots\ldots (1),$$

and the linear factor Σx from the determinant, equated to zero. If each member of (1) be λ, $\Sigma x = \Sigma a + n\lambda$; so that $\lambda = -\Sigma a/n$. Hence $x_r = a_r - \Sigma a/n$. This is all that is asked for: in a particular case (say $n = 3$) we have, if $\Sigma x \neq 0$, $\Sigma x_1^2 = \Sigma x_2 x_3$, or

$$\Sigma a_1^2 + \lambda\Sigma(2a_1-a_2-a_3) = \Sigma a_2 a_3: \ \ i.e., \ \Sigma a_1^2 = \Sigma a_2 a_3;$$

so that no other solution is possible, and it is easy to see that there is only one finite root for λ if $n = 4$.

16213. (R. N. Apte.)—The normals at P, Q of a parabola are at right angles, and from their point of intersection the third normal is drawn and meets the curve in R. Find the least distance of the centroid of the triangle PQR from the vertex. Also find the least distance from the vertex of the centroid of the triangle formed by tangents at P, Q, R.

Solutions (I.) *by* W. F. Beard, M.A., *and others*; (II.) *by* Professor Sanjána, M.A.

(I.) Let the co-ordinates of P, Q, R be am_1^2, $2am_1$, ...; then $m_1m_2 = -1$ and $\Sigma m_1 = 0$. Because $\Sigma m_1 = 0$, therefore

$$\Sigma am_1^2 = -2a\Sigma m_2m_3 = -2a\,[m_3(m_1+m_2)+m_1m_2] = 2a\,(1+m_3^2).$$

Thus the co-ordinates of the centroid of PQR are $\frac{1}{3}[2a\,(1+m_3^2)]$, 0; therefore its least distance from the vertex is $\frac{2}{3}a$.

If the tangents at P, Q, R meet at A, B, C, the co-ordinates of A, B, C are am_2m_3, $a\,(m_2+m_3)$, ... Thus the co-ordinates of the centroid of ABC are $-\frac{1}{3}[a\,(1+m_3^2)]$, 0 as above, and therefore the least distance of the centroid from the vertex is $\frac{1}{3}a$.

(II.) Let $y = mx-2am-am^3$ be any normal; then its foot is $(am^2, -2am)$ on the curve $y^2 = 4ax$. If the normal goes through (h, k), its three possible directions are connected by the relations

$$m_1+m_2+m_3 = 0, \quad m_1m_2+m_2m_3+m_3m_1 = (2a-h)/a, \quad m_1m_2m_3 = -k/a.$$

When two of these are at right angles (h, k) moves on $y^2 = a\,(x-3a)$; so that the least value of h is $3a$. Hence the distance of the centroid of PQR (which lies on the axis), being $\frac{1}{3}[a\,(\Sigma m_1^2)]$, is $\frac{1}{3}(2h-4a)$, and has the minimum value $\frac{2}{3}a$. The distance of the centroid of the tangent triangle (which also lies on the axis) being $\frac{1}{3}[a\,(\Sigma m_1m_2)]$, is $\frac{1}{3}(2a-h)$, and has the numerical minimum $\frac{1}{3}(-a)$; this, however, is really a maximum.

16218. (Professor Lauvernay.)—Construire un triangle, connaissant les rapports a/b, b/c et la somme $m_a+m_b+m_c$ des médianes.

Solution by J. Blaikie, M.A.

Let $a/b = k$, $b/c = l$. By a known theorem, we have

$$\begin{aligned} 4m_a^2 &= 2b+2c^2-a^2 = c^2\,(2l^2+2-k^2l^2) = L^2c^2, \\ 4m_b^2 &= 2c^2+2a^2-b^2 = c^2\,(2+2k^2l^2-l^2) = M^2c^2, \\ 4m_c^2 &= 2a+2b^2-c^2 = c^2\,(2k^2l^2+2l^2-1) = N^2c^2, \end{aligned}$$

therefore $\quad 2\,(m_a+m_b+m_c) = (L+M+N)\,c.$

Thus c is known, and hence b and a.

16097. (W. J. Greenstreet, M.A.)—Show that

$$\frac{b^2}{ab+a-}\ \frac{ab}{a+b+ab-}\ \frac{ab}{a+b+ab-}\ \cdots$$

to n quotients, identical after the first, is equal to $\dfrac{b}{a+}\ \dfrac{a}{b+}\ \dfrac{b}{a+}\ \dfrac{a}{b+}\ \cdots$ to $2n$ quotients.

Solution by C. M. Ross.

If $\dfrac{p_n}{q_n}$ is the n-th convergent,

$$p_n = (a+b+ab)\,p_{n-1}-ab\,p_{n-2}, \quad q_n = (a+b+ab)\,q_{n-1}-ab\,q_{n-2}\ldots(1,\ 2).$$

From (1) it is seen that the numerators form a recurring series, any three consecutive terms being connected by

$$p_n-(a+b+ab)\,p_{n-1}+ab\,p_{n-2}.$$

If S is the sum of this series,

$$S = \{p_1+[p_2-p_1\,(a+b+ab)]\,x\}/[1-(a+b+ab)\,x+abx^2].$$

But the first two convergents are $\dfrac{b^2}{ab+a}$, $\dfrac{b^2\,(a+b+ab)}{a\,[a\,(1+b)^2+b^2]}$; therefore

$$S = \frac{b^2}{1-(a+b+ab)\,x+abx^2}$$

$$= \frac{b^2}{\alpha\beta-ab}\left[\frac{a}{\alpha}\left(1-\frac{a}{\alpha}x\right)^{-1}-\frac{b}{\beta}\left(1-\frac{b}{\beta}x\right)^{-1}\right],$$

where $\quad \alpha\beta = 1, \quad ab+\alpha\beta = a+b+ab;$

whence p_n = coefficient of x^{n-1} on the dexter

$$= \frac{b^2}{\alpha\beta-ab}\left[\frac{a}{\alpha}\,\frac{a^{n-1}}{\alpha^{n-1}}-\frac{b}{\beta}\,\frac{b^{n-1}}{\beta^{n-1}}\right] = \frac{b^2}{\alpha\beta-ab}\left[\left(\frac{a}{\alpha}\right)^n-\left(\frac{b}{\beta}\right)^n\right].$$

Similarly,

$$\begin{aligned} S' &= \{q_1+[q_2-q_1\,(a+b+ab)]\,x\}/[1-(a+b+ab)\,x+abx^2] \\ &= (ab+a-abx)/[1-(a+b+ab)\,x+abx^2] \\ &= \frac{1}{\alpha\beta-ab}\left[\frac{a}{\alpha}\,(a+ab-\alpha b)\left(1-\frac{a}{\alpha}x\right)^{-1}\right. \\ &\qquad\qquad \left.-\frac{b}{\beta}\,(a+ab-\alpha\beta)\left(1-\frac{b}{\beta}x\right)^{-1}\right]. \end{aligned}$$

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Now q_n = coefficient of x^{n-1} on the dexter

$$= \frac{1}{a\beta - \alpha b}\left[(a\beta - b)\left(\frac{a}{\alpha}\right)^n - (\alpha b - b)\left(\frac{b}{\beta}\right)^n\right];$$

therefore
$$\frac{p_n}{q_n} = \frac{b^2\left[\left(\frac{a}{\alpha}\right)^n - \left(\frac{b}{\beta}\right)^n\right]}{(a\beta - b)\left(\frac{a}{\alpha}\right)^n - (\alpha b - b)\left(\frac{b}{\beta}\right)^n}.$$

As before, it will be found that p'_{2n} is the coefficient of x^{2n-1} in the expansion of

$$S_1 = \frac{b + b^2x - bax^2}{1 - (a + b + ab)\,x^2 + abx^4}$$

$$= \frac{b}{2\,(a\beta - \alpha b)}\left[\frac{a - a\alpha + b\sqrt{(a\alpha)}}{\alpha}\left(1 - x\sqrt{\frac{a}{\alpha}}\right)^{-1}\right.$$
$$+ \frac{a - a\alpha - b\sqrt{(a\alpha)}}{\alpha}\left(1 + x\sqrt{\frac{a}{\alpha}}\right)^{-1}$$
$$+ \frac{a\beta - b - b\sqrt{(b\beta)}}{\beta}\left(1 - x\sqrt{\frac{b}{\beta}}\right)^{-1}$$
$$\left. + \frac{a\beta - b + b\sqrt{(b\beta)}}{\beta}\left(1 + x\sqrt{\frac{b}{\beta}}\right)^{-1}\right];$$

whence

$$p'_{2n} = \frac{b}{2\,(a\beta - \alpha b)}\left\{\left(\frac{a}{\alpha}\right)^{\frac{1}{2}(2n-1)}\frac{1}{\alpha}\left[a - a\alpha + b\sqrt{(a\alpha)} - a + a\alpha + b\sqrt{(a\alpha)}\right]\right.$$
$$\left. + \left(\frac{b}{\beta}\right)^{\frac{1}{2}(2n-1)}\frac{1}{\beta}\left[a\beta - b - b\sqrt{(b\beta)} - a\beta + b - b\sqrt{(b\beta)}\right]\right\}$$

$$= \frac{b^2}{a\beta - \alpha b}\left[\left(\frac{a}{\alpha}\right)^{\frac{1}{2}(2n-1)}\frac{a^{\frac{1}{2}}}{\alpha} - \left(\frac{b}{\beta}\right)^{\frac{1}{2}(2n-1)}\frac{b^{\frac{1}{2}}}{\beta^{\frac{1}{2}}}\right]$$

$$= \frac{b^2}{a\beta - \alpha b}\left[\left(\frac{a}{\alpha}\right)^n - \left(\frac{b}{\beta}\right)^n\right].$$

Similarly, $$q'_{2n} = \frac{1}{a\beta - \alpha b}\left[(a\beta - b)\left(\frac{a}{\alpha}\right)^n - (\alpha b - b)\left(\frac{b}{\beta}\right)^n\right];$$

therefore
$$\frac{p'_{2n}}{q'_{2n}} = \frac{b^2\left[\left(\frac{a}{\alpha}\right)^n - \left(\frac{b}{\beta}\right)^n\right]}{(a\beta - b)\left(\frac{a}{\alpha}\right)^n - (\alpha b - b)\left(\frac{b}{\beta}\right)^n};$$

therefore
$$\frac{p_n}{q_n} = \frac{p'_{2n}}{q'_{2n}}.$$

QUESTIONS FOR SOLUTION.

16273. (W. J. GREENSTREET, M.A.)—Three inelastic particles of unequal masses and velocities approach from different directions, impinge, and coalesce. Find the loss of energy.

16274. (Professor NEUBERG.)—Intégrer l'équation
$$ap^3 + bp^2 = (3ay + 2bx + c)^2 \quad (p = dy/dx).$$

16275. (S. NARAYANA AIYAR).—Show that
$$\frac{\tanh x \sec^2 x + \tan x \operatorname{sech}^2 x}{\tan x \tanh x + \cot x \coth x}$$
$$+ \sum_{n=1}^{n=\infty} B_{2n-1}\frac{2^{2n}(2^{2n}-1)}{2n!}x^{2n-1}\left[2^n \cos\tfrac{1}{2}n\pi - 1 - (-1)^n\right] = 0,$$
where B_{2n-1} is the n-th Bernoulli's number.

16276. (C. M. ROSS.)—If
$$\begin{vmatrix} \sin 2\theta, & \cos\theta, & \sin\theta, & 1 \\ \sin 2\phi, & \cos\phi, & \sin\phi, & 1 \\ \sin 2\psi, & \cos\psi, & \sin\psi, & 1 \\ \sin 2\chi, & \cos\chi, & \sin\chi, & 1 \end{vmatrix} = 0$$
and if θ, ϕ, ψ, χ are different positive angles each less than 2π, prove that $\theta + \phi + \psi + \chi = n\pi$ (n an integer).

16277. (Lt.-Col. ALLAN CUNNINGHAM, R.E.) — Find a series of numbers expressible in two ways in the form $N = (x^6 + y^6)/(x^2 + y^2)$, and show that this cannot be done in three ways. Show how to resolve them algebraically into two factors (say L, M); and express these factors algebraically in their three 2-ic forms. Give two examples, one the lowest possible, and one of at least fourteen figures resolved into its prime factors.

16278. (T. STUART, M.A., D.Sc.)—Factorize (without much calculation) the numbers 35533327, 26109371, and 136842217.

16279. (Robt. W. D. Christie.)—Solve by an easy general process, integrally or fractionally, $X^3-pY^3=1$ where in the former case Y is > 1, as, *e.g.*, $18^3-17.7^3=1$, $\left(\frac{36}{17}\right)^3-19\left(\frac{13}{17}\right)^3=1$.

16280. (Professor A. Droz-Farny.)—Si P_λ/Q_λ est une réduite de rang λ de la fraction continue $\sqrt{2}=1+\cfrac{1}{2+\cfrac{1}{2+\dots}}$, démontrez que

$$P_\lambda = Q_{\lambda-1}+Q_\lambda, \qquad P_\lambda = P_{\lambda-1}+2Q_{\lambda-1}.$$

16281. (Professor Nanson.)—Having given the $n+1$ equations

$$a^{m-r}x^r+b^{m-r}y^r+c^{m-r}z^r+\dots=0$$

where $r=0, 1, 2, \dots, n$ and there are $n+2$ letters $x, y, z, \dots$, and having given also that $x^m+y^m+z^m+\dots=0$ where m is a positive integer greater than n, then, unless $a, b, c, \dots$ all vanish, either the ratios $x:a$, $y:b$, $z:c$, ... are all equal or the sum of the homogeneous products of $m-n-1$ dimensions of these ratios is zero.

16282. (R. F. Whitehead, B.A.)—If $(l, m, n, \lambda, \mu, \nu)$ be the six coordinates of a line so that (l, m, n) are its direction cosines, (x, y, z) any point on it, and $ny-mz=\lambda$, $lz-nx=\mu$, $mx-ly=\nu$, the line will be a generator of a quadric (1) similar and coaxial with

$$x^2/a+y^2/b+z^2/c=1, \quad \text{if} \quad a\lambda/l=b\mu/m=c\nu/n,$$

(2) confocal with the same quadric, if

$$[(b-c)\,l/\lambda+\lambda/l]^2=[(a-c)\,m/\mu+\mu/m]^2, \ \dots,$$

three equations equivalent to two independent conditions. The latter is also the condition that the line $(l, m, n, \lambda, \mu, \nu)$ is one of the focal lines to a tangent cone from some point to one of the system of confocals (Salmon, § 175). Both conditions are satisfied if the line is a generator of the original quadric.

16283. (A. M. Nesbitt, M.A.)—To a cylindrical jam-tin is affixed a circular label whose diameter is equal to that of the cylinder. If the tin be lying on its side on a horizontal table with the centre of the label in contact with the table, discuss the curve which is the orthogonal projection on the table of the contour of the label; and prove that its area bears to that of an ellipse of equal maximum and minimum diameters the ratio of 22 to 21 approximately.

16284. (V. Ramaswami Aiyar, M.A.)—Prove the first theorem in the following table, and show that the rest are corollaries. (*Note.*—The table may be considered an extension of that given in Question 15961, *Educational Times*, March, 1906.)

ABC being a triangle inscribed in a conic X, focus S, and Z being the pedal circle of S with respect to the triangle ABC—	ABC being a triangle and O its circum-centre—
(*a*) If a conic Y have one focus at A and the other focus in the side BC and touch the axis major of X at S, its auxiliary circle touches Z.	(*a'*) If a conic Y have one focus at A and the other focus in BC and pass through the circum-centre, its auxiliary circle touches the nine-point circle.
(*b*) If A be an extremity of the axis major which cuts BC in D, the circle on AD as diameter touches Z.	(*b'*) If the line AO cuts BC in D, the circle on AD as diameter touches the nine-point circle.
(*c*) If A be an extremity of the latus rectum through S, which cuts BC in D, the circle whose centre is the middle point of AD and which passes through S touches Z.	(*c'*) If AO cuts BC in D, the circle whose centre is the middle point of AD and which passes through O touches the nine-point circle.
(*d*) If A be an extremity of the axis major and BC be parallel to that axis, the pedal circle Z touches the tangent at A.	(*d'*) If OA be parallel to BC, the nine-point circle touches the tangent at A to the circum-circle.
(*e*) If A be an extremity of the latus rectum through S and BC be perpendicular to the major axis, the pedal circle Z touches that axis.	(*e'*) If OA be parallel to BC, the nine-point circle touches the perpendicular from O on BC.
(*f*) If the lines AS and BC be equally inclined in opposite ways to the axis major and M be the foot of the perpendicular from A on the axis major, the perpendicular from M on BC touches Z.	(*f'*) If B'C' be the diameter of the circum-circle drawn parallel to BC, the perpendiculars drawn to BC through the middle points of AB' and AC' are tangents to the nine-point circle.

(*Continued on page* 418.)

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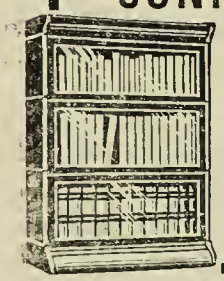

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The Educational Times.

Education and Practical Success.

"THE question how far success at school and at the University is likely to be followed by success in the serious struggle of life is one of enormous practical importance." So says Mr. Edgar Schuster in the new Eugenics Laboratory Memoir (2s. 6d., Dulau), headed "The Promise of Youth and the Performance of Manhood," "being a Statistical Inquiry into the question whether success in the Examination for the B.A. Degree at Oxford is followed by success in professional life." The importance of the question is manifested in many ways. Mr. Schuster notes two: (1) the bearing on scholarships and exhibitions, in which many hundreds of thousands of pounds are annually spent "for the purpose of giving exceptionally able men the opportunity of securing a good education and a good chance in life"; and (2) the still more important bearing "in the field of Eugenics, where any practical suggestion as to the means of receiving a more rapid multiplication of the abler parts of the community must take the form of encouraging, in one way or in another, the marriages of those who have shown ability in boyhood or in early manhood." We do not now discuss either these or other aspects of importance, nor do we doubt in the least the general proposition, or the desirability of treating education in every possible way on the principles of science. But we want to consider for a moment Mr. Schuster's application of principles.

In approaching the subject, one is bound to recognize the extreme difficulty of the inquiry. Education, like all other social phenomena, is a tangle of the utmost complexity; and success in professional life is conditioned by so many other things besides "education," whether Oxonian or other. Mr. Schuster shows himself quite alive to this initial obstacle. He cannot possibly treat the question in all its fullness: he is compelled to make a selection of points. He takes the Oxford class lists, restricts himself to the two professions of the Church and the Bar, and tabulates the successes of the honours men in their after career in those two spheres of professional life. The complications are paralyzing, and have to be reduced in order to get to results of any kind. Thus, in one case, "to save time, a sample consisting of the first 1,103 [out of 2,457] in alphabetical order was taken and analyzed" with certain results; and obviously such results diminish in value in proportion to the simplification effected in the materials from which they are deduced. For the details, which are very well worth patient study, we must refer to the Memoir. The broad conclusion is "that the chance of a successful career in the Church is very markedly greater for first class men than for second class, for second class than for third, and so on"; and "that success both at the Bar and in the Church has a quite well-marked causal relationship with success in the Oxford final schools, and it is probable that, if a better measure of success in these professions [than the records of Crockford's "Clerical Directory" and Foster's "Men of the Bar"] had been available, this relationship would have been found to be still more intimate." This conclusion appears to be reassuring.

The investigation affords a certain statistical confirmation of an opinion that is readily and irresistibly reached by general observation and experience of the two professional groups, altogether apart from the scientific methods of laboratory inquiry. By itself, therefore, it really does not seem to be of much material importance; as one inquiry in connexion with others it will, no doubt, acquire greater force. The social circumstances and the personal qualities of the men, apart from their Oxford experiences, probably exercise no inconsiderable influence upon their professional success. We do not select our most eminent theologian, or our most pious Churchman, to preside over the see of Canterbury or of York. We do not place on the Woolsack the most learned or the most acute member of the bar; and there are said to have been, if not to be, plain examples that a barrister may become a judge, even a judge of the High Court, without any distinctive intellectual or legal ability recognized by the profession. In the teaching profession a man's career is, perhaps, very largely determined by his University achievement: a brilliant Oxford career may place him at the head of a great school in his twenties, while a no less able and no less accomplished man that has not run faithfully in the academic grooves may be condemned to spend his whole life, in spite of distinctive professional success, in the obscurity of a third-rate grammar school. The influences not purely intellectual, and the in-

tellectual forces that are not measured in the Oxford class lists, also have to be explored. What is the part played by ample means, by birth and connexions, by the whole of the intricate and subtle processes comprised under the term "influence," more or less relevant and reasonable, or otherwise? What is the part played by intellectual and general personal capacity as such? What is the relation of the substance and the accidents of a man's personality? These things operate not merely in exceptional cases, but in far the larger number of cases: they are regular elements in the practical career. The inquiry therefore needs to be immensely extended. As we have said, Mr. Schuster is well aware of the limitations of his present investigation; but, still, there they are, and they are very formidable indeed. All that we can say, then, for this elaborate investigation is that it is a welcome scientific confirmation of a tolerably obvious social fact. The validity of the fact is, indeed, the main basis of the whole system of University and school training; and it is better to have it presumptively established by the most advanced scientific inquiry than to rely merely on the lay rule of thumb.

In this connexion we may recall an American statistical inquiry on analogous lines, of which we published a summary just a year ago. It was drawn up by Mr. William Smith, Chancellor of the Randolph-Macon system of schools, and carefully verified by Dr. W. T. Harris, the head of the American Department of Education. We repeat the results (*Educational Times*, October 1, 1906, page 436):—

> It thus appears: (1) that from 1800 to 1870 the uneducated boy in the United States failed entirely to become so notable in any department of usefulness and reputable endeavour as to attract the attention of the *Who's Who* editors, and that only twenty-four self-taught men succeeded; (2) that a boy with only a common-school education had, in round numbers, one chance in 9,000; (3) that a high-school training increased this chance nearly twenty-two times; (4) that college education added gave the young man about ten times the chance of a high-school boy, and two hundred times the chance of the boy whose training stopped with the common school; (5) that the A.B. graduate was pre-eminently successful, and that the self-educated man was inconspicuous.

Here is practically the same general lesson, drawn from a similarly incomplete state of facts, though "the fullest statistics ever obtained": "the more school training the American boy of that period had, the greater were his chances of distinction." We had better continue to go to school, and to Oxford, and make the best of the opportunities offered.

NOTES.

"But," says Sir Alfred Jones, K.C.M.G., who, we believe, is an honorary Fellow of an Oxford college, as well as a captain of industry, "if I wanted to spoil a man for commerce, I would send him to Oxford or Cambridge." According to his experience, which we have no means of estimating, "the University man brought into commerce at twenty-five years of age has not the best chance of success—not the chance possessed by a youth of sixteen." We do not know why the University man should wait till he is twenty-five, though of course he cannot start at sixteen. He should be able to begin at twenty-one or twenty-two. Sir Alfred thinks a youth destined to business and bent on an academic preparation had better go to one of the newer Universities. The reason is this: "The local Universities are newer, more imbued with the modern progressive spirit, and recognize more spontaneously and naturally the extended scope which should nowadays be given to points having relation to commerce, and adjust the curriculum accordingly." The difficulty in criticizing statements of this sort, which are so readily accepted from the lips of a successful business man without the necessary criticism, is that the facts behind them are inadequately reported. One cannot but suspect the influence of the Philistine idea of specific instruction as superior to broad general awakening of the faculties. "Je veux," said Madame de la Jeannotière, "que mon fils réussisse dans le monde; et vous voyez bien que, s'il savait le latin, il serait perdu." But Madame's plan does not encourage ardent imitation.

On the other hand, M. Paul Adam comes forward, in the *Revue Hebdomadaire*, to warn his fellow Frenchmen that the decline of France in the commercial world—from the second to the fourth place—is due to the fact that the trading classes have abandoned classical education. The great Greek and Roman classics, he contends, furnish finer mental exercise than the multiplication table, even though the knowledge cannot be weighed up in the shop scales. So he points to the bachelors and licentiates of the Universities as the best recruits for the counting-house—if they could only be induced to forgo patriotically the crowded paths of the liberal professions. Then the trade and commerce of France would advance by leaps and bounds to the old pre-eminence. Probably M. Adam knows as little about the internal processes of commercial administration as Sir Alfred Jones knows about the real significance of an average Oxford training. It is so difficult to get great men, whether literary or commercial, to marshal and con the facts before they proceed to pronounce a confident judgment. One must, therefore, take the opinions of both with handfuls of salt. The pity is that sober thinkers of less worldly prominence have nothing like so good a chance of being favoured with popular attention. It is always easier to denounce the stuffing of youth with "un amas de connaissances inutiles," whether literary or commercial, than to establish a firm basis of educational procedure on full and well ascertained understanding of all the relevant considerations.

The discussion of the scholarship system at the Leicester meeting of the British Association, which we present elsewhere in the official summary of representative papers, ought to clear the ground for some definite and satisfactory reform. There is, however, one side of this many-sided question that is by no means prominent in the treatment of any of the energetic debaters. That is, what the scholarships are to be expended upon. In many cases this aspect of the matter is not practically important, the object of the expenditure—fees, maintenance, and so forth—being obvious and without complications. It is in connexion with the Universities, and more especially in connexion with Oxford and Cambridge, that the question seems urgent. We do

not now argue for or against the reasonableness of the inevitable expenditure of a student at the old Universities whether in college or non-collegiate: we merely point to the greater cost there than at other Universities, and suggest that a lower expenditure would very materially relieve the charge on scholarships. If the expenditure cannot be lowered there is no more to say: the scholarships must be found to meet it. But the difference is so marked that the point challenges inquiry, and it is a very important matter for those that have to find the money. It is becoming very evident that popular opinion will require—and justly require—that Oxford and Cambridge shall be as accessible to the children of poor parents as any other University in this country and in all civilized countries in the world.

THE annual "Declaration of Principles" of the National Education Association of the United States is always pitched on a high note. This year the principles are no less abstract and comprehensive than on previous occasions. Still, while it is elevating and inspiring to contemplate far-reaching ideals, there are not lacking suggestions at least of definite concrete working rules to hasten the advent of the educational millennium. There is no harm in repeating that "the ultimate object of popular education is to teach children how to live righteously, healthfully, and happily," and that "the building of character is the real aim of the schools and the ultimate reason for the expenditure of millions for their maintenance"; there is a practical touch in the demand for "a much larger support" from Congress, for higher qualifications of teachers, and for "such adequate compensation for their work that both teachers and public will recognize teaching as a profession." It is suggestive to find an express declaration that the claims of teachers should rest upon "preparatory training, experience, and meritorious service—in a word, professional fitness alone"—and that "the use of other personal and political arguments is immoral in the teacher and a serious menace to a high professional standard." A political test, we should suppose, is some degrees worse than an ecclesiastical test. Yet the Association goes boldly into the political sphere in favour of a peaceful as against a warlike policy, and calls for the application of American influence "to widen the scope and increase the power of the Hague tribunal"—no doubt a beneficent idea, but then why not a similar opinion upon Tariffs, Trusts, and so forth? The general drift of the document, however, indicates high and unselfish purpose and a strenuous moral effort for national as well as for professional ends.

THERE should be plenty of room for playgrounds in America. We in this country are supposed to be in continual danger of falling over the edge, but Americans, we have been given to understand, run no such risk. However, their civilization appears to have congested their big cities, very much as our own effete system has done for our cities. So last year there was established a Playground Association. "There were several local playground associations in existence," says the *Chatauquan*, "but the need of national co-operation was keenly felt by all of them." The objects of the Association are: "to study playground construction and administration; to experiment with new features; to give publicity to playground information and ideas; to hold national conventions and play festivals, and stimulate general interest in the subject." Recently the Association held its first annual convention in Chicago, which was designated as the right place by President Roosevelt; for "Chicago has two-score parks, 'squares,' and playgrounds, and some of them are models of their kind"—varying in magnitude from 85 acres to 90 by 250 feet. "The convention," we are gratified to learn, "was in every way a notable success." The speakers, we are told, "considered the relation of rational play and exercise to juvenile delinquency, to vice and filth, to education, to economic well-being, to health and morality; as well as the value of playgrounds in training the young for citizenship and the duties of life by inculcating discipline, order, co-operation, and *esprit de corps*." Very good. But then one cannot but marvel what has been the outcome of the strenuous labours of the members of the National Education Association, of the prelections of teachers of civics and sociology in the colleges and Universities, and of the high democratic spirit of the people. The London County Council rises immensely in our estimation. Perhaps the Association will send a deputation to Spring Gardens, and Mr. Burns will proudly conduct them over Battersea Park.

THE results of the recent Intermediate Examination in Arts of the University of Allahabad, according to the *Pioneer*, "reveal a disappointing record of failure and mediocrity." There were well over 1,100 candidates, and only 443—say 40 per cent.—were successful, and of these 328—say 75 per cent.—passed in the third division. Only five candidates got into the first division (and two of them were Europeans), and 110 into the second. Yet, says *Indian Education*, this successful percentage of 40 is "in fact a larger percentage than Indian University results sometimes yield." Our contemporary lays the blame upon "the system." Like other students, Indian students as a rule do want to pass their examinations. Why, then, do they fail so egregiously? This is why:

> In Universities the chief causes of the breakdown are, to begin with, the unsatisfactory groundwork sent up by the schools. Then the Universities themselves, though supposed to "cram" pupils for examinations, really, in one way, neglect to do this altogether. They exact from their pupils scarcely any written work, and give them no instructions how to answer questions. Thus the unfortunate victims who have filled themselves up with relevant or irrelevant knowledge about their books go into the examination hall with scarcely any knowledge how to put anything down on paper.
>
> In schools the chief cause of the grand failure of Matriculation is the promotion of boys throughout the school who are unfit to be promoted. It is scarcely possible to exaggerate the evil that springs in India from this one remediable cause. We believe in most schools it is the rule to promote the whole standard every term. It is certain that many of them are quite unfit to go, and the result is the ruin of these duller boys along with that of their cleverer companions. We understand that the parents insist upon this, and the boys insist upon it, and masters cannot be found who have the moral courage to resist it.

Very well; let us not be surprised when we see "the successful candidates at a Matriculation examination falling to 18 per cent." But what is one to think of this as a specimen of our incomparable success in administering Indian affairs?

SUMMARY OF THE MONTH.

The Board of Education have issued a regulation supplementary to the Regulations for Secondary Schools in England, excluding Monmouthshire, dated in June, 1907. Under this the Board may, notwithstanding anything contained in Art. 44 of the Regulations for Secondary Schools, 1907, recognize as eligible for grants for the school year 1907–8 a secondary school which, though not on the grant list of secondary schools for the year 1906–7, was recognized for that year as a pupil-teacher centre under Art. 11 of the Regulations for the Instruction and Training of Pupil-Teachers, 1906; and such school may receive grants at the rates and subject to the conditions indicated in Arts. 42 and 43 of the Regulations for Secondary Schools, 1907.

The Bishop of Birmingham, dealing in the *Diocesan Magazine* with the new Regulations of the Board of Education respecting Training Colleges, says there appears to be widespread misconception as to the grounds of Churchmen's objections. They desire that the fullest opportunities should be given to Nonconformists to fit themselves for the work of a teacher under the religious influences which their consciences approve; all they contend for is the freedom to retain for the Church students the residences which have been built for them at immense expense with the fullest encouragement of the State. Further, the Bishop says: "This revolution in the system of our existing training colleges is accomplished not by the introduction of a Bill into Parliament which must submit to the ordeal of public discussion before it can become law; it is accomplished by an administrative order, which is subject to no discussion and admits of no appeal, and this, too, in a matter which it cannot even be said that the constituencies have ever had before them. We protest against the method of these regulations, then, as arbitrary and unconstitutional, and we protest against the principle involved—viz., that the State is to protect, to establish, and to endow a certain kind of religious teaching which many persons, Churchmen and Roman Catholics, who are ratepayers and taxpayers, believe to be the least effective and real, and to treat the kind of religious teaching which is based upon the standard of the Church or of some definite religious body as if it were the enemy to be defeated. I do not know whether the tyranny which threatens us in this matter is to be effectively resisted. But I do know that it is a kind of religious tyranny which I cannot but believe a Liberal Government will be taught to regret."

The educational demands of the organized workers of this country are expressed in the following points of a resolution adopted at the recent Trade Union Congress at Bath:—(1) The State maintenance of school children. (2) Scientific physical education with individual medical inspection, and records of the physical development of all children attending State schools, and skilled medical attendance for any requiring it; and, in order to secure this, (*a*) the formation of a properly staffed medical department at the Board of Education, the head of which shall be directly responsible to the Minister of Education, to whom he shall report annually, (*b*) the payment of an adequate grant from the Imperial Exchequer for purposes of medical inspection, (*c*) the establishment under every Education Authority of scientifically organized open-air recovery schools, the cost to be borne by the community as a whole, and not in any part by charitable contributions. (3) The complete dissociation of reforms (1) and (2) from Poor Law administration. (4) A national system of education under full popular control, free and secular, from the primary school to the University. (5) That secondary and technical education be an essential part of every child's education, and secured by such a reform and extension of the scholarship system as will place a maintenance scholarship within the reach of every child, and thus make it possible for all children to be full-time day pupils up to the age of sixteen. (6) That the best intellectual and technical training be provided for the teachers of the children; that each educational district shall be required to train the number of pupil-teachers demanded by local needs and to establish training colleges, preferably in connexion with Universities or University colleges. (7) That the provision of educational buildings and facilities be obligatory upon the Local Authority, who shall always retain administrative control of the buildings and facilities so provided. (8) That the cost of education shall be met by grants from the Imperial Exchequer, and by the restoration of misappropriated educational endowments. (9) That it be an instruction to the Parliamentary Committee of the Trade Union Congress to formulate these proposals in a Bill to be laid before Parliament during the forthcoming session.

The London County Council directs attention to the facilities offered for evening instruction in the various institutions under its control. In the various polytechnics, technical institutes, and schools of art situated in the county, classes in science, art, and technology, music, artistic handicrafts, &c., are now reopened. These institutions provide instruction of an advanced or technical character. The Council offers annually scholarships and exhibitions to the total value of £1500 for competition among students of polytechnics, technical institutes, and art schools. Thirty-six London County Council schools are centres for instruction in commercial and science and art subjects. These centres are in a degree contributory to the polytechnics and technical institutes mentioned above, and are primarily intended for students not sufficiently advanced for the polytechnic classes. Advanced work, however, is taken in many of the subjects. In 237 London County Council school buildings, situated in every part of London, ordinary evening schools are opened this session. The instruction will, as a rule, be of a character preparatory to that given in the centres.

Last week a very interesting scheme of historical teaching was inaugurated under the auspices of the London County Council. In the days of the old School Board lectures on the local history of various parts of London were delivered to the teachers in the London schools; but this new scheme takes the history of London as a whole, and the syllabus has been drawn up with a view to describing the development of civic institutions and life and showing the place that the city holds in the history of the country generally. The lectures are open to all teachers in London schools, both elementary and secondary, and are to be given in five different centres, so as to convenience the teachers from all parts of London. They are being organized and delivered by Mr. H. K. Vickers, M.A., Lecturer in Modern History at University College, Bristol. It is hoped that a new interest in the teaching of history will arise when the general movements of the country at large can be illustrated by the history of a locality with which both teacher and taught are familiar.

The West Ham Education Committee have adopted the report of the conference between certain members of the Committee and representatives of the teachers with reference to the recent controversy. All the teachers who left the Council's service owing to the dispute will, if they desire and the Education Committee and Council agree, be reinstated on the staff as opportunity occurs at the salaries they were receiving at the time they left, providing they return within two years.

Upwards of 3,000 candidates entered for the Cambridge Local Examinations held in July. The class lists are now issued. The following statistics do not include the colonial candidates:—Of 496 Senior boys, 19 passed in Class I., 25 in Class II., 52 in Class III., and 245 satisfied the examiners (20 of these being above nineteen), while 127 failed. Of 907 Junior boys, 64 passed in Class I., 44 in Class II., 100 in Class III., and 445 satisfied the examiners (120 of these being above 16), while 217 failed. Of 656 Senior girls, 6 passed in Class I., 22 in Class II., 41 in Class III., and 299 satisfied the examiners (65 of these being above nineteen), while 241 failed. Of 649 Junior girls, 13 passed in Class I., 13 in Class II., 47 in Class III., and 418 satisfied the examiners (147 of these being above sixteen), while 142 failed. Of 342 boys in the Preliminary Examination, 5 passed in Class I., 13 in Class II., 26 in Class III., and 207 satisfied the examiners (100 of these being between fourteen and sixteen), while 81 failed. Of 184 girls, 2 passed in Class I., 3 in Class II., 12 in Class III., and 114 satisfied the examiners (41 of these being between fourteen and sixteen), while 43 failed.

The results of the annual examination for higher and lower certificates held by the Oxford and Cambridge Schools Examination Board in July show that for higher certificates there were 2,244 candidates, of whom 552 girls were candidates for letters only, and that the number of higher certificates awarded was 1,061, and 434 letters were given to girls. In Latin there were 1,164 candidates, and 870 passed, 42 with distinction. In Greek

there were 935 candidates, and 739 passed, 28 with distinction. Of 1,496 offering French, 709 passed, 53 with distinction. Of 289 examined in German, 187 passed, 46 with distinction. In elementary mathematics there were 1,757 candidates, and 1,318 were successful; whilst in additional mathematics 503 sent up papers, of whom 388 passed, 52 with distinction. Of 1,222 offering Scripture knowledge, 879 were successful, and 54 gained distinction. Of 903 offering English, 725 passed, 37 with distinction, There were 452 candidates offering the English essay only, but the number who passed was 546, which is explained by the fact that some candidates offering the whole subject of English passed in essay only. In history there were 1,373 candidates, of whom 983 passed, 64 with distinction. Of 23 candidates offering geography, 14 were successful. In the mechanical division of natural philosophy 122 out of 170 satisfied the examiners, 24 gaining distinction; in the physical division 102 out of 130 passed, 24 with distinction; and in the chemical division 122 out of 153 passed, 19 with distinction. Forty-three candidates offered experimental science, and 21 satisfied the examiners. Of 23 offering physical geography and elementary geology, 16 passed, 3 gaining the extra mark. Of 262 offering biology, 195 passed, 16 with distinction. Of 160 offering drawing, 116 were successful, and 13 gained distinction. Of 30 candidates in music, 25 passed, 3 with distinction. For lower certificates there was an entry of 1,027 candidates, and 463 certificates are awarded.

The secondary agricultural school at Bigods Hall, Dunmow, which was established by Lady Warwick ten years ago to provide a scientific education in agricultural affairs for the boys and girls of the district, is to be closed. The Earl of Warwick, in a letter to the chairman of the Essex Education Committee, explains the reasons for the taking of this step. He states that, although the county Committee has given the school a grant, it has intimated the possibility of a re-consideration of the educational necessities of the locality, and the head master has received the offer of another appointment; complaint is also made that the school has suffered from a lack of cordial support from the Committee.

The autumn meetings of the Assistant Masters' Association were held at King Edward's High School, Birmingham, on September 13 and 14. On the first day the council passed resolutions on a benevolent fund, life insurance of members, and the new Regulations for Secondary Schools. At the general meeting held next morning all these were approved. The Chairman, Mr. A. A. Somerville, of Eton College, in his address on the work of the Association during the year, touched upon several subjects of importance, not only to members, but also to the profession at large—such as the representation of secondary teachers on the new Registration Council, the importance of some amount of military training in schools, and the Richmond (Yorkshire) School case. The latter was described as the most important matter which the Association had had on hand for many years. The judgment lately given was one in which it was impossible to acquiesce, and notice of appeal had therefore been given. The report of the executive committee showed that the Association has, during the year, been active in connexion with such questions as co-education, on which a valuable report has been framed by the South-East Wales Branch; the position of assistant masters under the Workmen's Compensation Act; representation on Education Committees, &c. It was reported that three new branches had been formed this year, and that the membership shows a steady increase. A special report on the Richmond case was presented by the committee to whom its conduct had been entrusted. The guarantee fund was announced to amount at present to close upon £900. In the afternoon Prof. Muirhead, Birmingham, read a paper on "Religion in Secondary Schools," which was followed by a discussion. The paper will, we understand, be shortly published in full in the *Hibbert Journal*.

The following are the resolutions passed by the Association on the new Regulations for Secondary Schools :—

Curriculum and Organization.—That this Association warmly welcomes the decision of the Board to give increased freedom to schools in the planning and working of their curricula.

Grants.—(1) That this Association heartily welcomes the Board's proposals : (*a*) to pay grants on behalf of all scholars between twelve and eighteen years of age ; (*b*) to make the term, instead of the school year, the basis of assessment. (2) That this Association is of opinion that, owing to the dearth of suitable candidates in some localities, the enforcement of paragraph 20, requiring that 25 per cent. of all scholars admitted to a secondary school shall be pupils from elementary schools, may possibly lead to a lowering of the standard of secondary education in those localities. (3) That this Association heartily approves the Board's desire to secure secondary-school scholars from elementary schools at as early an age as possible; but considers that a grant of £2 per head for scholars between ten and twelve years of age is inadequate.

The Berlin correspondent of the *Tribune* reports particulars of the Akademische Auskunftstelle, or Academic Inquiry Office. instituted some three years ago through the efforts of Prof. Althoff. It is practically the first attempt in Germany to provide an accessible and reliable source of information as to the cost of preparation for and the prospects of success in any particular vocation. In its first year the office answered 675 inquiries by post and some 10,000 orally, though its existence was apparently not very widely known. It is divided into a dozen departments :—(1) Berlin institutes for science and arts, *e.g.*, high schools, libraries, museums, hospitals, &c.; (2) other scientific institutes in Germany; (3) Universities and academies of foreign countries, especially America, Great Britain, Sweden, Norway, France, Switzerland, Italy, &c.; (4) professional associations of Berlin; (5) vocations in Germany, statistics and details of necessary course of study, test examinations, promotion, and prospects; (6) points in connexion with the above of especial importance to foreigners; (7) holiday courses in Germany and abroad; (8) courses for general public instruction; (9) education of women in German and Swiss high schools; (10) prizes offered by high schools, associations, and official bodies; (11) laboratories, museums, &c., devoted to inquiries in connexion with the different vocations. The institute is situated in the Berlin University buildings, and inquiries are answered daily in and out of term from 10 a.m. until 1.30 p.m.

The body of Dr. Henry Bellyse Baildon, M.A. Cantab., Ph.D. Freib., Lecturer in English Language and Literature at University College, Dundee, was found (September 7) in a disused quarry. Dr. Baildon was married only two months ago to Mrs. Mary Ann Kellar, of Manchester. He was a native of Edinburgh and a friend of Robert Louis Stevenson from school days. He had written several literary and scholastic works.

We record with deep regret the death of Mr. James Adam, LL.D., Senior Tutor of Emmanuel College, Cambridge, at Aberdeen, after a surgical operation. Dr. Adam was a native of Aberdeenshire, and had a most distinguished career at Aberdeen University, graduating with first class honours in classics and winning several important prizes and scholarships. Proceeding to Caius College, Cambridge, he continued his successes, and some 13 years ago was appointed Senior Tutor of Emmanuel College. He was distinguished for his scholarship and culture, and took a very active and valued part in the work of the Council of the Senate. He received the honorary degree of LL.D. from Aberdeen University some years ago, and he also filled the important position of Gifford Lecturer in connexion with the University, his subject being the religions of Greece. These Gifford lectures, we understand, are ready for press. Dr. Adam was a recognized authority on Plato. He was 46 years of age, and is survived by a widow and three children.

UNIVERSITIES AND COLLEGES.

London. In consequence of the removal of University College School to Hampstead, the south wing of the College buildings has been set free for University purposes, enabling the following developments to take place, beginning with the new session. In the mechanical engineering department a new hydraulic laboratory will be provided in the basement, and also additional space for experimental work in mechanical engineering during the second and third years. A separate laboratory will be set aside for research work, thereby leaving the main laboratory entirely free for undergraduate work. In the department of electrical engineering, the present lecture room will be replaced by a large new lecture room with a small demonstration class room adjoining it.

The old lecture room will be fitted up as an experimental room for advanced students. The electrical engineering department will also contain a research laboratory with apparatus and preparation rooms adjoining. The department of applied mathematics will also receive considerable extensions, providing two special research laboratories and ample accommodation for the work being carried on in Galton Eugenics Laboratory. New accommodation will be provided for the department of geology, and will include a museum, with a research room, and a lecture room suitably equipped with lantern apparatus.

East London College, which was evolved from the educational work of the People's Palace, largely under the fostering influences of the Drapers' Company, and was admitted in May last a school of the University, in the faculties of Arts, Science, and Engineering, offers excellent opportunities to the East End youth at very moderate fees. The staff has just been greatly strengthened, and the laboratories and workshops, thanks to the generosity of the Drapers' Company, are thoroughly well equipped.

Birmingham.

A SCHEME has been prepared for extending the curriculum of the Faculty of Commerce in the interests of the manufacturing jewellers' and silversmiths' trades. The details have been worked out by the University authorities in consultation with the Birmingham Jewellers' and Silversmiths' Association, the latter body having urged the advantage which would accrue if the essential features of the ordinary degree course of the faculty could be combined with special technical subjects designed to be of definite use in after life to the sons of jewellers and others who may be intended to occupy positions of responsibility in the industry. The scheme proceeds on parallel lines to that already in operation in the interests of the engineering business, the special theoretical and practical studies applicable to the jewellers' and silversmiths' trades being obtainable at the Victoria Street School, where technical instruction has been provided for a number of years. Courses of instruction in the various branches of commerce, and in drawing, modelling, and processes, have been drawn up for the first, second, and third years. It is emphasized that, though any person capable of benefiting thereby is allowed to attend the lectures on payment of the prescribed fees, those who wish to be admitted to full membership of the University, and to work toward a degree, must matriculate, and it is suggested that boys should qualify before leaving school.

Belfast—Queen's College.

LORD KELVIN, owing to the illness of Lady Kelvin, was unable to perform the ceremony of opening seven new laboratories for scientific instruction and research at Queen's College, Belfast, and his place was taken by Sir Otto Jaffe, ex-Lord Mayor. In an address read by Mr. James Thompson, his nephew, Lord Kelvin said that the sooner the University of Belfast was officially proclaimed to be an independent national University the better it would be for Ireland.

CORRESPONDENCE.

[*We do not hold ourselves responsible for the opinions expressed by our correspondents.*—ED. *E.T.*]

DIRECT MORAL INSTRUCTION.

To the Editor of "The Educational Times."

SIR,—Only one other word. Mr. Paton has expressly referred to the three habits of "punctuality, accuracy, and neatness."

His whole position rests on the dogma of "formal training." Adams refuted that in the fifth chapter of his "Herbartian Psychology." Curiously enough, some recent American researches, mainly conducted by Thorndyke, have shown that two out of the three virtues above mentioned (accuracy and neatness) cannot be "generalized." A boy cannot be "trained" to accuracy or neatness apart from ideas and principles—in other words, apart from moral instruction.

Let me refer Mr. Paton and your readers to Bagley's "Educative Process," chapter xiii.—I am, Sir, &c.,

F. H. HAYWARD.

87 Benthal Road, Stoke Newington, N.,
September 9, 1907.

AMERICAN NATIONAL EDUCATION ASSOCIATION.

NEW DECLARATION OF PRINCIPLES.

(LOS ANGELES MEETING, JULY, 1907.)

1. AMERICAN teachers have been accustomed for years to look upon the Bureau of Education of the Department of the Interior at Washington, D.C., as the nation's great educational exchange and clearing house, not only for educational information and statistics, but also for the extensive investigation of special questions touching education and for the dissemination of the results of such work. Realizing that this work, to be effective, must receive liberal financial aid, the Association wishes to declare the Bureau of Education worthy of a much larger support than it has received in the past and to urge upon Congress the favourable consideration of this need.

2. The National Education Association notes with approval that the qualifications demanded of teachers in the public schools, and especially in city schools, are increasing annually, and particularly that in many localities special preparation is demanded of teachers. Some of the large Universities, recognizing their responsibility to their immediate communities, have organized courses suitable in scope and convenient as to hours for these teachers. The idea that any one with a fair education can teach school is gradually giving way to the correct notion that teachers must make special preparation for the vocation of teaching. The higher standard demanded of teachers must lead logically to higher salaries for teachers.

We regret the attempt that is being made in some quarters to evade the consequence of low salaries. The salaries, and often the conditions under which the teachers in the public schools teach, do not offer sufficient inducement to offset the more promising positions in the commercial life of a large city. Recourse is had, therefore, to selecting students with incomplete high-school or normal-school training to fill these yearly increasing vacancies. Hence we believe that constant effort should be made by all persons interested in education to secure for teachers such adequate compensation for their work that both teacher and public will recognize teaching as a profession. We wish heartily to endorse the action of those legislatures that have fixed a minimum salary at a living wage.

3. The rapid establishment of township or rural high schools is one of the most gratifying evidences of the progress of education. We believe that this movement should be encouraged until the children of rural communities enjoy the benefits of public education to an extent approximating as nearly as practicable the education furnished in urban communities.

4. The Association heartily approves the efforts now being made to determine the proper place of industrial education in the public schools. We believe that the time is rapidly approaching when both industrial and commercial education should be introduced in all schools and made to harmonize with the occupations of the community. These courses, when introduced, should include instruction in agricultural, as well as manual, branches. We believe that it is the duty of the State not only to qualify its children to be good citizens, but also, as far as possible, to be useful members of their community. Hence, wherever conditions justify their establishment, trade schools should be maintained at public expense to fit children, as far as possible, for a chosen career.

5. The National Education Association endorses the increasing use of urban-school buildings for free vacation schools and for free evening schools and lecture courses for adults and for children who have been obliged to leave the day school prematurely. We also approve the use of school grounds for playgrounds, and even of the buildings for the relief of the poor in the crowded districts during summer.

6. It is the duty of the State to provide for the education of every child within its borders and to see that all children obtain the rudiments of an education. The constitutional provision that all taxpayers must contribute to the support of the public schools logically carries with it the implied provision that no persons should be permitted to defeat the purposes of the public-school law by forcing their children at an early age to become bread-winners. To this end the child labour and truancy laws should be so harmonized that the education of the child, not its labour, be made the desideratum.

7. The National Government should provide schools for the children of all persons living in territory under the immediate control of the Government. The attention of Congress is specially directed to the need of adequate legislation to provide

schools for the children of citizens of the United States living on naval reservations.

8. The Association regrets the revival in some quarters of the idea that the common school is a place for teaching nothing but reading, spelling, writing, and ciphering, and takes this occasion to declare that the ultimate object of popular education is to teach children how to live righteously, healthfully, and happily, and that to accomplish this object it is essential that every school inculcate the love of truth, justice, purity, and beauty through the study also of biography, history, ethics, natural history, music, drawing, and the manual arts.

9. The National Education Association wishes to record its approval of the increasing appreciation among educators of the fact that the building of character is the real aim of the schools and the ultimate reason for the expenditure of millions for their maintenance. There is in the minds of the children and youth of to-day a tendency toward a disregard for constituted authority, a lack of respect for age and superior wisdom, a weak appreciation of the demands of duty, a disposition to follow pleasure and interest rather than obligation and order. This condition demands the earliest thought and action of our leaders of opinion and places important obligations upon school authorities.

10. The National Education Association wishes to congratulate the secondary schools and colleges of the country that are making an effort to remove the taint of professionalism that has crept into students' sports. This taint can be removed only by leading students, alumni, and school faculties to recognize that inter-school games should be played for sportsmanship, and not merely for victory.

11. The National Education Association observes with great satisfaction the tendency of cities and towns to replace large School Committees or Boards, which have exercised through sub-committees executive functions, by small Boards which determine general policies, but entrust all executive functions to salaried experts.

12. Local taxation, supplemented by State taxation, presents the best means for the support of the public schools and for securing that deep interest in them which is necessary to their greatest efficiency. State aid should be granted only as supplementary to local taxation, and not as a substitute for it.

13. We cannot too often repeat that close, intelligent, judicious supervision is necessary for all grades.

14. The National Education Association approves the efforts of the Simplified Spelling Board and other bodies to promote the simplification of English spelling by the judicious omission of useless silent letters and the substitution of a more regular and intelligible spelling in place of forms that are grossly irregular or anomalous, such amendments to be made according to the existing rules and analogies of English spelling, with a due regard to the standards accepted by scholars; and the Association hereby approves the simpler forms contained in the list of three hundred words now spelled in two or more ways, published by the Simplified Spelling Board, and containing the twelve simplified forms now used by this Association, and directs that these simpler forms be used in the publications of the Association in accordance with the rule now in force that, if the writer of any paper published by this Association expressly so desires, his paper shall be printed in the old spelling.

15. Without seeking to determine the merits of co-education *versus* separation of the sexes in higher institutions, the Association recognizes that at present the demand for separate higher instruction for women is greater than existing colleges for women can supply. Moreover, the great colleges for women are almost all grouped in one section of the country. We urge upon the attention of the friends of higher education for women the needs of the Western and Southern States for this kind of educational institution.

16. The Association believes that secret societies, fraternities, and sororities are inimical to the best interests of schools and pupils, and we urge school authorities to abolish them in all secondary and elementary schools.

17. In teaching, as in every other kind of work, the best service is secured by finding the individual best fitted to the particular place as indicated by training, experience, and meritorious service. The National Education Association accordingly heartily approved a merit system of promoting teachers and filling vacancies. We assert, furthermore, that the grounds upon which a teacher may apply for a position are preparatory training, experience, and meritorious service—in a word, professional fitness alone—and that the use of other personal and political arguments is immoral in the teacher and a serious menace to a high professional standard.

18. The Association regrets the purely theoretical work which still characterizes much of our so-called training of teachers, especially in colleges and Universities, and urges the establishment everywhere of training and practice facilities for the better preparation of teachers.

19. The National Education Association believes that the forces of this world should be organized and operated in the interests of peace and not of war; we believe that the material, commercial, and social interests of the people of the United States and of the whole world demand that the energies of the governments and of the people be devoted to the constructive and helpful pursuits of peace, and that the people be relieved of the burdens of providing at enormous expense the armaments suggested by the competitive desire for supremacy in war. We further believe that the fear of war and the possibility of war would alike decline if governments were to rely more upon the sentiment of the people and less upon the strength of their armies and navies. We accordingly endorse and commend the sentiments expressed in the annual address by the president of this Association. We urge upon our representatives at the Second Hague Conference to use their influence to widen the scope and increase the power of the Hague tribunal. While disclaiming any desire to suggest a programme or to urge specific action, we do urge our representatives to secure the most favourable action possible upon international arbitration, the limitation of armaments, the protection of private property at sea, and the investigation of international disputes by an imperial commission before the declaration of hostilities. We recommend to teachers that the work of the Hague Conference and of the peace associations be studied carefully and their results given proper consideration in the work of instruction.

20. The Association pledges itself anew to that time-honoured conception of the teacher's office which makes it one of unselfish service in a great human cause, education; and it calls upon teachers everywhere to remember that this conception must be fundamental in the establishment and conduct of their professional associations.

BOARD OF EDUCATION.

THE NEW MEDICAL DEPARTMENT.

The Board of Education have decided to establish a Medical Department to advise and assist them in the discharge of the new duties imposed on the Board by Section 13 of the Education (Administrative Provisions) Act in regard to the medical inspection of school children, which Local Education Authorities are required by that Act to carry out in England and Wales.

The chief duties of the Board in this direction will consist in advising and supervising Local Education Authorities as to the manner and degree in which those Authorities carry out this medical inspection; in giving such directions as may be necessary regarding the frequency and method of such inspection in particular areas; and in considering and sanctioning such arrangements as may be proposed under the Act by individual Authorities for attending to the health and physical condition of the children. The Board will also collect and collate the records and reports made by the Authorities in the process of carrying out the new duties imposed by the Act, and will issue an official annual report on the subject.

The organization and *personnel* of the Board's Medical Department are not yet fully determined, but, in view of the varied factors and influences which are concerned, directly or indirectly, with the health and physical condition of the children of the nation, it has been decided by the Board to establish the Department on a broad basis of public health, and so to organize its work as not only to allow of reasonable freedom for Local Authorities as to particular methods, consistently with securing an adequate degree of uniformity in the presentation of results for comparative purposes, but also to use as far as practicable the means and methods of sanitary administration already existing, and to develop and supplement these as may be found best for the increased requirements, rather than to supplant them or to bring new competing agencies into existence where this may be avoided.

As a first step the President has appointed Mr. George Newman, M.D., F.R.S. (Edin.), D.P.H. (Camb.), as Chief Medical

Officer of the Board. Dr. Newman has been Medical Officer of Health of the Metropolitan Borough of Finsbury since 1900. He is also Lecturer on Public Health and Sanitary Administration in St. Bartholomew's Hospital (University of London), and has had the advantage of provincial experience as Consulting Medical Officer to the County Council of Bedfordshire. He has published various works and official reports upon matters of State medicine, both of a general and special character, including the control of the milk supply, infant mortality and its prevention, infectious diseases and sanitation in schools, food poisoning, housing, water supplies, and the physical condition of the people.

Dr. Alfred Eichholz, who has for nine years been on the Board's Staff as Medical Inspector of Schools, and, in addition to his special work in the Schools for Blind, for Deaf, for Epileptic and for Defective Children, has had close experience of the medical, hygienic, and sanitary aspects of elementary schools generally, and of recent investigations into the national physique as illustrated thereby, will also be appointed to the Medical Department; and further appointments will be made in due course.

The Board intend in the autumn to issue a circular to Local Education Authorities regarding their new duties in the matter of medical inspection of school children.

LEISURE IN THE SCHOOL.

There are enthusiastic teachers who are inspired by the spirit of rush (writes Mr. Arthur Gilman in a recent number of the *Atlantic Monthly*); but the school should not be a place of hurry and confusion. The air of calmness and peace should pervade its sphere of influence. The very word school gives the cue. The Greek words for leisure and scholastic must not be forgotten in our age of haste. To the Greek in his calm civilization, *schole* signified a place of leisure, and *scholastikos* was a person who employed his leisure in cultivating his mind. The teacher who is always pressed cannot perform his duty in a proper way. The spirit of hurry demands inevitably its sacrifice. It is true also that there is a spirit of thoroughness that is wearing, that exhausts the vitality. One who cannot discriminate between things that may properly be lightly touched, and those of more importance, is at a vast disadvantage. Text-books exist that show plainly that the editor was obsessed by the feeling that his work must be spoken of as "exhaustive," and he carries every point to the utmost verge of explanation, giving as great weight to those matters of little importance as to those of real value to the reader, and not complimenting him by supposing that he is in the possession of brains. In this case thoroughness is the thief of time and strength.

We know that there are two periods of leisure in the life of man—childhood and age. The first is adapted to the purposes of education, and the other to counsel and meditation. There are favoured mortals who are privileged to extend the time of leisure over their entire lives; but in comparison with the whole of humanity they are few in number. They have opportunities for benefiting the world that others cannot hope for. Professors and other instructors in institutions of learning should belong to the favoured class; but their chances for leisure are lessened by the fact that they are so poorly paid that they are forced to focus all their attention on the effort to make provision for the physical needs of their households and themselves. Clergymen should also belong to this class, but too often their stipends are so niggardly that they, too, are obliged to forgo every advantage that leisure could and ought to bring.

Childhood is, therefore, the only real period of leisure that can be counted on by mankind in general, and this is the period of education proper, the time of school days.

If, now, a school is a place of leisure, not of bustle and haste; if by education we mean training, the development of the child, mind, body, and soul, the acquisition of power, the establishment of character; if by teacher we mean a person capable of performing this great and beneficent work, a man or a woman who can be properly described as a "combination of heart, head, artistic training, and favouring circumstances, an artificer in mind and noble life," rather than a hearer of lessons, then we are brought to the conclusion that there are very few teachers anywhere, and but little education. Perhaps, however, the case is not quite so desperate as it appears, and we must at least comfort ourselves with the recollection that there have been great teachers in the past; and we may believe that many are now at work forming the character of the coming generation, even in the beginning of the twentieth century. The trouble is that in this world of storm and stress they are at a disadvantage, and the merely mechanical teacher can almost always make a better impression on the average parent. A father or a mother is ordinarily not an educational specialist, and is obliged to come to a decision after a superficial survey which does not give the work of the real instructor time to show itself. Nature, whom, indeed, we must follow, does not make haste. The seed does not become a tree in a day or a week, even in a forcing house; and yet many parents expect the teacher to show at the end of a brief period the rings that the oak tree takes years to develop.

ELEMENTARY TEACHERS AND THE WORKMEN'S COMPENSATION ACT.

A letter was recently addressed by the Board of Education to the Local Education Authority for Somerset, who had corresponded with the Board about the respective liabilities under the Workmen's Compensation Act, 1906, of Local Education Authorities and the managers of non-provided schools to the teachers employed in provided and non-provided elementary schools within the area of the Authority. The Board wrote:

The question of whether a teacher in an elementary school is or is not a workman within the meaning of Section 13 of the Workmen's Compensation Act, 1906, is one ultimately for the decision of a court of law, and the Board of Education have no power under the Act to give a binding decision on the subject.

In the event, however, of the employers of a teacher in an elementary school being held to be liable to compensate that teacher under the Act in respect of personal injuries by accident arising out of and in the course of that teacher's employment, it may be that questions may arise between the Local Education Authority and the managers of a non-provided school in which the teacher is employed as to whether that liability rests upon the Authority or upon the managers. The Board of Education are advised that in such circumstances it would be their duty, upon the question being referred to them under Section 7 (3) of the Education Act, 1902, to decide the question as between the Authority and the managers. The Board have, therefore, sought legal advice with a view both to their own guidance in the event of such a question being referred to them and to their being enabled to give general advice to Local Education Authorities and managers with regard to their liabilities under the Act.

The Board are advised that teachers whose salaries do not exceed £250 per annum are within the provisions of the Workmen's Compensation Act, 1906, and are entitled to compensation, as that Act provides, if injured by accident arising out of and in the course of their employment.

The persons primarily liable to pay compensation to a teacher so injured are the employers of the teacher, and the Board are advised that the employers within the meaning of the Act are the persons with whom the teacher has entered into his contract of service. In the case of provided schools, therefore, the persons liable will be the Local Education Authority.

In the case of non-provided schools, the Board are advised that the employers of a teacher for the purposes of the Workmen's Compensation Act are, generally speaking, the managers of the non-provided school.

The Board are further advised that the payment of compensation in cases of accident has now become a necessary incident of the employment of teachers, and, therefore, that, subject to the consideration of the facts of any particular case which may be referred for the decision of the Board under Section 7 (3) of the Act of 1902, in the case of a non-provided school, the managers are entitled to be indemnified in respect of any compensation paid by them under the Workmen's Compensation Act by the Local Education Authority, upon whom the maintenance expenses of the school are imposed by Section 7 (1) of the Act of 1902.

At a recent meeting of the Bristol Branch of the English Association, a paper on "Reading Books" was given by Mr. F. Pickles, M.A. The paper was followed by a discussion, with criticism of books at present in use; and a sub-committee was formed with the object of recommending those most suitable for reading in schools.

CURRENT EVENTS.

Fixtures.

At the monthly meeting of members of the College of Preceptors on October 16, Mr. Harrold Johnson will read a paper on "The Moral Instruction League and its Critics."

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Madame Latour will address the Société Nationale des Professeurs de Français en Angleterre on "Paul Bourget et les Déclassés" at the College of Preceptors on October 26, at 4 p.m.

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Mr. Banister Fletcher, F.R.I.B.A., has just commenced (September 30) a course of public lectures on "Gothic Architecture in Europe," illustrated by lantern slides and diagrams, at the University of London, South Kensington, on Mondays, at 8 p.m. The lectures form a continuation of those given on "Ancient Architecture" last session.

* * *

Mr. Percival Gaskell, R.B., will lecture at the University of London on "German, Flemish, Dutch, and Spanish Painters," on Tuesdays, at 3 and 8 p.m., beginning October 1. This series is the second year's work of a three years' course, and will have special reference to the work of the painters in the National Gallery. It will be very fully illustrated by lantern slides.

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Bedford College for Women offers two courses, open free to teachers in London schools, for the Michaelmas term:—(1) "The Organization of Nature Study Courses in London Schools," by Miss M. R. N. Holmer, M.A., Natural Science Tripos, Cambridge. Saturdays, 10.30, beginning October 5. (2) "Geology for Teachers of Physical Geography," by Miss C. A. Raisin, D.Sc. Wednesdays, 6 p.m., beginning October 9. Syllabuses on application to the Principal.

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Mrs. C. W. Kimmins will lecture, under the auspices of the Froebel Society, on "Children's Games" at the Essex Hall, Strand, on October 10, at 8 p.m. A class of children will give musical illustrations.

Honours.

Prof. W. B. Spencer, F.R.S., Professor of Biology in the University of Melbourne, formerly Scholar of Exeter, and Fellow of Lincoln, has been elected an Honorary Fellow of Exeter College, Oxford.

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Miss Alice Brunton, daughter of Sir Lauder Brunton, has been awarded the diploma of Officier de l'Instruction Publique in recognition of her services to the recent International Congress on School Hygiene.

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On his retirement from the Rectorship of Moray House Training College, Edinburgh, Dr. Maurice Paterson was presented with his portrait and a cheque.

Endowments and Benefactions.

The Bishops of London, Southwark, and St. Albans are appealing for some £3,000 to repair and equip Cheshunt College as a Church of England Theological Training College, and for a guarantee fund of £1,000 a year for staff stipends. £1,370 is already promised.

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Yale University will benefit to the extent of some £80,000 under the will of the late Mr. A. H. Blount, Lord of the Manor of Orleton, Hereford.

Appointments and Vacancies.

Mr. P. J. Lennox, B.A., Professor of English and History in University College, Blackrock, has been appointed Professor of English Language and Literature in the Catholic University, Washington, in succession to Dr. Maurice F. Egan, who has been nominated United States Minister at Copenhagen.

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At the East London College Miss Anna L. Littleboy has been appointed Lecturer in English Language and Literature; Mr. A. J. Spilsbury, M.A., Lecturer in Latin and Greek; Mr. W. A. Nayler, B.A., Fourth Wrangler, 1907, Lecturer in Mathematics; Mr. Claude B. Epps, M.A., Lecturer in Geology; Dr. F. E. Fritsch, D.Sc., Ph.D. Munich, Lecturer in Botany; Mr. C. A. Smith, B.Sc., Assistant Professor of Civil and Mechanical Engineering; and Mr. L. Murphy, Lecturer in Electrical Engineering.

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At University College, Bangor, Miss J. E. Murdoch, M.A. Aberd., has been appointed Assistant Lecturer in Philosophy and Education; and Mr. W. J. Lewis, B.Sc. Wales, science master, Verdin Secondary School, Winsford, has been appointed Assistant Lecturer in the Day Training Department.

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Mr. Thomas P. Young has been appointed Lecturer in French Language and Literature in University College, Dundee.

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Miss Helen Rutherford, M.A., Warden of University Students under the Glasgow Provincial Committee, has been appointed Principal Lady Warden of the Glasgow Provincial Training College.

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Canon Garrod, Principal of the Ripon Training College, has been appointed to the Canonry of Ripon Cathedral, vacant by the death of Canon McColl.

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Mr. J. G. Taylor has been appointed Secretary to the West Hartlepool Education Committee, in succession to the late Mr. J. Robson Smith.

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Mr. George S. Baxter has been appointed Secretary to the Sheffield Education Committee.

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Mr. Arnold Smith, M.A. Lond., Lecturer in English, University College, Cardiff, has been appointed vice-master in the Battersea Polytechnic Boys' Secondary School.

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Mr. George Grace, B.Sc. Lond., A.R.C.S., Principal of the Technical School, Doncaster, has been appointed Principal of the Barrow Technical School.

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Miss E. L. White, M.A., has been appointed Head Mistress of the Portsmouth Day Training College for Women.

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The Rev. H. Woolsey, M.A. T.C.D., second master, Hurstpierpoint College, has been appointed Head Master of St. Oswald's College, Ellesmere.

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Mr. C. H. Ross, M.A. Cantab., second master at Kingston Grammar School, has been appointed Head Master of Thornbury Grammar School, in succession to Mr. George Nixon, retired.

A Head Mistress is wanted for Beverley High School for Girls. Apply to the Clerk to the Governors, County Hall, Beverley, by October 15.

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Mr. William M'Laren, M.A., B.Sc., Rector of Miller Institution, Thurso, has been appointed Head Master of Stranraer High School, in succession to Dr. Davidson.

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Mr. C. H. Cox, B.Sc. Lond., L.C.P., science master, Tottenham Grammar School, has been appointed Head Master of Upholland Grammar School, Lancashire, in succession to the Rev. D. S. Rennard, B.A. Lond., resigned.

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Mr. W. R. Jones, B.A., has been appointed assistant master at Ipswich Municipal Secondary School for Boys.

Scholarships and Prizes.

Entrance Scholarship Examination dates at Oxford colleges are announced as follows: — *Classics:* December 3, Balliol, Queen's, St. John's, Hertford, and Keble; December 10, University, Exeter, Oriel, Brasenose, Christ Church, Trinity, and Wadham; December 16, Merton, Lincoln, and Worcester; January 14, 1908, Jesus; March 17, 1908, New College, Magdalen, and Corpus Christi. *Mathematics:* December 3, Balliol, Queen's, Corpus Christi, New College, Merton, Exeter, and Hertford; January 14, 1908, Jesus. *Natural Science:* October 1, Pembroke; December 3, Balliol, Christ Church, Trinity, Queen's, and Hertford; December 10, University, Lincoln, and Magdalen; January 14, 1908, Jesus; March, 1908, New College, Merton, and Corpus Christi. *History:* December 3, Balliol, New College, Queen's, St. John's, Hertford, and Keble; December 10, Lincoln, Magdalen, and Trinity; January 11, 1908, Merton and Brasenose; January 14, 1908, Jesus.

* * *

Bedford College for Women offers two open scholarships, £15 each, for the course of secondary training beginning in January, 1908. Apply by December 9 to the Head of the Training Department, from whom the necessary forms and particulars can be obtained.

Literary Items.

The first volume of "The Cambridge History of English Literature," under the editorship of the Master of Peterhouse and Mr. A. R. Waller, will be published in England and America on November 1. It will be entitled "From the Beginnings to the Cycles of Romance," and will contain contributions on "Early National Poetry," by Mr. H. M. Chadwick; "The Arthurian Legend," by Prof. W. Lewis Jones; "Metrical Romances," by Prof. W. P. Ker and by Prof. J. W. H. Atkins; "English Scholars of Paris and Franciscans of Oxford," by Dr. J. E. Sandys; "Changes in the Language to the Conquest," by Dr. Henry Bradley, &c.

* * *

In the long list of forthcoming books at the Clarendon Press we note "The Life of Christ in recent Research," by Dr. Sanday; "The Writing of English," by P. J. Hartog, assisted by Mrs. A. H. Langdon; "Ancient Britain and the Invasions of Julius Cæsar," by T. Rice Holmes; "English Society in the Eleventh Century"—Essays in English Mediæval History—by Prof. Vinogradoff; "The Rise of the Greek Epic," by Dr. Gilbert Murray; a third edition of Mr. Haigh's "Attic Theatre," revised and in part rewritten by A. W. Pickard-Cambridge; and a great number of new editions and translations.

Messrs. Blackie announce a number of interesting new books for the coming season, comprising poetry, travel, and biography. We note also "The Call of the Homeland," a collection illustrating, from the poetry of the mother and daughter countries, "that extended conception of patriotism which is developing in the national literature"; a biography of the late Mr. G. A. Henty, by Mr. Manville Fenn, his lifelong friend and fellow-worker in the field of juvenile literature; and the more important educational writings of the late Mr. T. G. Rooper, H.M.I.S., edited by Mr. R. G. Tatton, who contributes a memoir of the author.

* * *

Mr. Fisher Unwin is just adding to his excellent "Library of Literary History" a "Literary History of France," by M. Emile Faguet, of the Académie Française. He also announces "A Short History of Indian Literature," by Prof. Ernst Horrwitz, of Dublin, with an Introduction by Prof. Rhys Davids.

* * *

There will be special interest in Mr. Gerald Massey's new work, "Ancient Egypt, the Light of the World," which is just published by Mr. Fisher Unwin in two large volumes. It deals largely with the relation of Jewish and Christian doctrine to the wisdom of the Egyptians.

* * *

The Walter Scott Publishing Company are issuing Wilson's "Tales of the Border" in 24 shilling volumes, with 120 full-page illustrations of the Border country.

* * *

Mr. H. J. Glaisher, of Wigmore Street, is publishing for the Ambrose Company "Anthropometrical Schedules," prepared by Mr. John Gray, Secretary to the Anthropometrical Committee of the British Association, and also a "Book of Instructions for taking Anthropometrical Measurements," by the same author.

* * *

The *Academy* of September 14 had an "Educational Supplement," with several vigorous articles on different aspects of education.

General.

"Bovril, Limited," is offering maps of the British Empire, 57 × 42 in., mounted on rollers and linen-bound, "to *bona-fide* school masters and school mistresses who will undertake to display them in their schools, and from time to time give geographical lessons on the subject of the vastness of the British Empire"—all for 6d. (carriage charge) each. But are the schools really so ignorant and destitute as this patriotic benevolence implies?

* * *

The series of diagrams illustrating "First Aid" (published by Messrs. George Philip & Son) was awarded a Bronze Medal at the recent International Congress on School Hygiene.

* * *

The West Riding Education Committee state in their Annual Report that "the average salaries of assistant masters and mistresses in the schools of the Riding have steadily risen since 1903, and there is no doubt that a corresponding improvement in the quality of the teaching has taken place." They still find difficulty in "securing competent teachers (more especially masters) of modern languages by the most recent methods."

* * *

The Garden City Association is offering free lectures on the Housing and Land Questions, Town Planning, and kindred subjects. Apply to the Secretary, 602 Birkbeck Bank Chambers, Holborn, W.C.

OPEN COURT.

Thay haif said . . .
Quhat say thay ?—Lat thame say !

EXTRA-DIMENSIONAL CONCEPTS.

By the Rev. J. O. Bevan, M.A.

How far are extra-dimensional concepts capable of realization by individuals constituted as we ourselves now are? How far is there a possibility of translating into everyday thought algebraic equations involving more than three powers, when geometry, and not mere number, is dealt with?

We can bring ourselves to understand the hypothetical conditions under which sentient beings could exist in space of one dimension or of two dimensions; and the limitation of their conception of the section of any object coming within their ken from the second or the third dimension respectively. With the possibilities of three-dimensional space we are personally familiar by everyday experience. The existence of space of an infinite number of dimensions should lead us to conclude that there are more things in heaven and earth than are known to our philosophy.

In certain problems in three-dimensional (solid) geometry it is sometimes desirable to work with four co-ordinates, and, in the result, to put one element equal to zero. Herein we seem to have a practical demonstration of the existence of space of four dimensions. Further, models have actually been constructed to represent sections of a four-dimensional object by three-dimensional space.

Again, the analogy of the section of a solid body (three-dimensional) made by a plane (two-dimensional) helps us to realize the conception of a body in space of four dimensions when it reveals that part of itself only which (at any given time) was included in certain circumscribed three-dimensional limits.

What bounds are there, then, to the conception of extra-dimensional space? Algebraically, there is no limit; but, in respect to its practical exponent, Geometry, is there a limit? If so, what? Can we proceed inductively, and assert that, as the problem is conceivable as between three dimensions and two, it may also be conceivable as between four and three, five and four, ... n and $n-1$?

If so, should we be helped to a more extended and truer conception of Space than that usually entertained? And would this avail to explain certain phenomena connected with the existence and sphere of action of ether and (the imponderable forces of) heat, light, electricity, magnetism, ultra waves of visibility, ultra waves of audition, &c.; as well as to explain certain geometrical conceptions, as, *e.g.*, points at infinity, limits, and the like? Possibly, also, psychic phenomena, relating to clairvoyance, second sight, and "miracle" generally, might be rendered explicable.

Of course, certain mathematical conceptions are conventional. They have no real existence, but are assumed in order that their use may facilitate algebraic operations, as, *e.g.*, with $\sqrt{-1}$. They have their use, and are eliminated. The entities above referred to, however, stand in a different category and in a different relation to fact.

On the other hand, is the explanation to be sought, not on the objective side of our consciousness, but on the subjective? *E.g.*, matter, of itself, we cannot realize save through its "accidents": some of these being essential, as Extension, Weight, Temperature, Cohesion, Divisibility; others non-essential, as Colour, Odour, Iridescence, Friability, Crystallization, and the like.

The apprehension of these properties is due to our senses, and ultimately to molecular changes in our brain centres.

How far may not the conception of such perplexing and staggering entities as Infinity, Eternity, as well as extra-dimensional space, be due to the operation of like sensations, and be actually bounded by the limits of our own brain pans, this conception itself being but the expression of a sectional element or phase of an entity of dimensions equal to n?

In relation to the conditions under which we exist on this planet, it is curious to note the persistence of the number *Three* in relation to our present life, and that in various departments, natural and artificial—*i.e.*, in those beyond our control as well as in those developed under mortal sanction. Thus, we have 3 dimensions in Space, dealt with by 3 co-ordinates—Length, Breadth, and Thickness; 3 divisions of Time—Past, Present, and Future; 3 states of Matter—Solid, Liquid, and Gaseous; 3 departments of Nature—Mineral, Vegetable, Animal; 3 elements of Existence—Body, Soul, and Spirit. In respect of Language—Active, Passive, and Neuter Verbs; Active, Passive, and Middle Voices; 3 Degrees of Comparison; of Politics—3 Estates of the Realm; of the Artistic Elements of Life—3 Graces and 3^2 Muses; of Poetry—the Triads; of War—Cavalry, Infantry, and Artillery; of Theology—Trinity of Divine Persons; Trinity of States of Being—Heaven, Earth, and Hell; Trinity of Christian Graces—Faith, Hope, and Charity.

Lastly, the number 3, added to 4 (the symbolic, or figurative, expression of Creation = four-cornered, four-square), makes 7, the perfect and complete, and therefore sacred, number of the Jews and other nations.

But these are used by way of illustration. It may be that there is no real vital connexion between them and the conditions of space in which we mortals are now constrained; but, then, again, one cannot tell!

RELIGION IN EDUCATION.

Address by Prof. Muirhead at the Birmingham Meeting of the Assistant Masters' Association.

Prof. Muirhead read a paper on "Religion in Education" to the Assistant Masters in Conference at Birmingham. He said they were face to face with a situation of sufficient seriousness in the existence of an idea of education which had lost its old unity of purpose, and had not yet been moulded into harmony with any sufficiently inspiring conception of a new one. It was the sense of this change that underlay much of the educational unrest at the present time, and formed the justification of the proposals of the party which sought in the name of the Church to re-establish control over the spirit and atmosphere of the school. What made it impossible to admit this claim was the fact that our conception of the universe and man's relation to it had deepened and widened so as no longer to find adequate expression in the forms to which the Church would confine it. To save the situation it must be met in its entirety. The anomaly and impossibility either of building up a true system of education out of the wood, hay, and stubble of current secular ideas, or of returning to an outworn theological framework, must be recognized, and the task faced by the leaders of educational progress to reintroduce into school training, under modern conditions and in harmony with modern intellectual requirements, that unity of spiritual purpose which it had lost.

It was to the teaching of ordinary subjects in such a way that they might serve to deepen and ennoble feeling that attention must first be turned by those who were serious with their profession. Of these subjects, by common consent, history and literature offered the best opportunities. There was a sense in which it might be said that these were themselves religious subjects. Poetry and romance was an even readier means of bringing home the underlying causes or overruling Providence that worked in the affairs of men. Poetry was more philosophical than history. The reason was that it left the writer free to select what was essential to bring out—the working of character and destiny of law and purpose in events. Hence the intimate connexion which the Greeks discerned between the drama and religious worship. They were just beginning to re-discover this, and to have an inkling of what might be made of it—witness the school revivals of the Greek drama, and the reverent reproduction of the sacred or miracle play. When the power of the drama was fully realized, they would have recovered one of the noblest instruments of religious development.

One of the main needs of the present time was a deeper understanding of the meaning of religion and the course of religious development among teachers, and one of the chief aims of higher learning in the future was to meet this need. To it had passed from churches the task of inspiring the future generation with the conceptions of the meaning of life, which would in turn be carried by it through the press, the teaching in the schools, the pulpit, and general social intercourse and discussion, into the working ideals of the nation. Whether the Universities and colleges would rise to this conception of their mission remained to be seen. What seemed certain was that the spiritual well-being of nations would depend, in the coming century, on the extent to which they realized it.

What were the chief planks in the present framework of our educational system by which they could hold? For those who

felt themselves free to use it, the Bible was the one clear record of the development of the "soul of the people" from naïve Nature worship to the worship of God. He was inclined to think that they were not at the end, but at the beginning, of the usefulness of the Bible in the school. So far from decreasing its value, the new historical criticism would make the full use of it for the first time possible. Religion began in the family, and was continued in the church. They were committed in modern pedagogy to the recognition of the importance of corporate life and the necessity of connecting the work of the school in general with the larger life of the community. He had no sympathy with the contention that the State ought to have nothing to do with the religious education of children. In pledging itself to education of any kind, the State had pledged itself to religious education. The problem had been solved in thousands of secondary schools. What the parent had a right to require was that no obstacle should be placed in his children's way to their seeing the light as he saw it, and being received into the fold in which he had found peace.

PHILOSOPHY AND EDUCATION.

The *Athenæum* recently gave the following summary of the points of a paper read by Mr. Benjamin Dumville before the Aristotelian Society:—

In education, practice cannot always wait for theory. Often, therefore, the "practical" man despises theory. Tradition and expediency become the arbiters. But pure theory must base itself upon firm foundations. We must demand the *why* of both tradition and expediency; in other words, we must appeal to philosophy. The nature of one's ultimates, however, has far-reaching effects on educational theory. Spencer's order of importance of knowledges is very different from Aristotle's. In face of such contradictions many writers on educational theory fly back to the empirical sphere; but their "principles" lack consistency, and lead to contradictions. In morals, for instance, we are told both to educate to the standard of the moral order around us, and also to set before us the highest ideal. The former recommendation makes room for wordly "tact"; the latter indicates that "truth is the outcome of all thought and good of all action." Plato, in his "Republic," has given us an example of an educational system founded on a philosophy. He accepted the higher ideal; but he could ignore the practical side of life. We can no longer do so. If, then, we are to remain philosophers in education, we must elaborate a system of philosophy which takes into serious account all phases of life. This has been attempted by Dr. Rashdall in his "Commensurability of all Values" (*Mind*, April, 1902). But most modern systems of education are framed in the dark, lacking philosophical guidance. The "Humanists" (*e.g.*, Sturm) largely follow tradition. This leads to stagnation—mere reverence of the past. The "Realists" (*e.g.*, Comenius and Spencer) take account of modern activities, but lack any true philosophical ground. The "Naturalists" (*e.g.*, Rousseau) carry "development" to an extreme. Education, however, is not mere development: it is *training*, and training implies an end which the educator has in view. A new school has arisen—called by Mr. O. Browning the Scientific or Metaphysical School. Herbart is its chief representative. He founds his education on a philosophy which he elaborates. This philosophy exhibits certain weaknesses which are naturally reflected in his pedagogy. The derivative nature of will in his psychology is paralleled in his pedagogy by inordinate sacrifices to the doctrine of interest. The vagueness of his ethics corresponds to the uncertainty which many educators feel with regard to the efficacy of a many-sided interest in securing morality. Enough has been said to show the deep connexion which exists between philosophy and educational theory. Although compromise will always be necessary in practice, we ought not on that account to give up serious reflection on theory. The diversity of the inquiring is to be preferred to the unanimity of the ignorant. We cannot, perhaps, hope with Plato for a race of philosopher-kings, but we are not expecting more than is reasonable in looking forward to a generation of philosophical directors of education.

Mr. Fisher Unwin announces a further competition for a prize of 100 guineas for the best novel by an author who has never yet published a novel in volume form. Competing novels may be sent to him up to April 30, 1908.

MEETING OF THE COUNCIL OF THE COLLEGE OF PRECEPTORS.

A meeting of the Council was held at the College, Bloomsbury Square, on September 21. Present: Dr. Wormell, President, in the chair; Prof. Adams, Dr. Armitage Smith, Mr. Barlet, Mr. Baumann, Rev. Canon Bell, Mr. A. E. Butler, Mr J. L. Butler, Mr. Charles, Mr. Hawe, Miss Jebb, Rev. R. Lee, Rev. G. E. Mackie, Dr. Moody, Mr. Pinches, Mr. Rule, Rev. Dr. Scott, Mr. Starbuck, Mr. Storr, Mr. Vincent, and Mr. White.

The minutes of the last meeting were read and confirmed.

The Secretary reported that the Summer Examination of Teachers for the College Diplomas had taken place on August 26–30, at 8 centres in the United Kingdom and 3 Colonial centres, and had been attended by 340 candidates.

He reported that the Professional Preliminary Examination had taken place on September 3–5, and had been attended by 212 candidates.

The diploma of Licentiate was granted to Miss E. Alleyn, and that of Associate to Miss A. F. Balls and Mr. J. G. Garland, who had satisfied the prescribed conditions.

The Report of the Examination Committee was adopted. The Report dealt mainly with the conditions of exemption from examination in certain subjects required for the A.C.P. Diploma as affected by recent alterations in the method of classification of students of training colleges who had passed the examination for the Government Certificate.

The Report of the Finance Committee on the accounts for the Midsummer quarter was adopted.

The representatives of the College presented a Report of the proceedings of the Federal Council at their meeting on June 20. The questions considered by the Council included the curricula of secondary schools, the application of the Workmen's Compensation Act to the case of assistant teachers in schools, the representation of secondary-school teachers on County Education Committees, and other matters.

The following persons were elected members of the College:—

Mr. G. MacGregor, L.C.P., Grammar School, Wigan.
Miss A. Rawcliffe, L.C.P., St. Mary's Convent, Middlesbrough.

The following books had been presented to the Library since the last meeting of the Council:—

By the Author.—The Higher Criticism, by the Rev. J. O. Bevan.
By the Board of Education.—Modern Sides of Public Schools; No. 3—Eton.
By G. Bell & Sons.—Bell's Concise Latin Course, Part II.; Heath's Stories and Anecdotes for Translation into French; Sinclair's Second Year's Course in Practical Physics.
By A. & C. Black.—Nicklin's Old Testament History, Part II.
By Blackie & Son.—Thouaille and Whitfield's First Steps in Commercial French; Meyer's Bedford High School Conversational German Grammar; Livingstone's Cape Town to Loanda; Lamb's Tales from Shakespeare; Froissart's Border Warfare; Major's Stories to Remember (2 parts); English Classics (Hart-Leap Well and The Nut-Brown Maid); Clay's Longfellow's Saga of King Olaf; Little French Classics (Dumas's Aventure de D'Artagnan, De Maistre's Le Lépreux de la Cité d'Aoste, Scott's A Little Book of French Poetry); Story Book Reader (Ruskin's King of the Golden River); Little Plays (Hainsselin's La Belle au Bois Dormant).
By the Cambridge University Press.—Thomson's Poems by Wordsworth.
By Hachette & Co.—Barrère's Hugo's Waterloo; Ceppi's French Lessons on the Direct Method (Junior Course).
By Macmillan & Co.—Lock and Turnbull's Arithmetic for Schools.
By Methuen & Co.—Croft's L'Equipage de la Belle-Nivernaise; Firth's First History of Greece; Spragge's Junior Greek History; Wilmot-Buxton's Stories from Roman History.
By J. Murray.—Wyld's Growth of English; Edmund's and Spooner's Readings in English Literature, Vol. II. (Junior, Intermediate, and Senior Courses); Edmunds and Spooner's Story of English Literature, Vol. II.
By the Oxford University Press.—Delbos's Stern's Les Journées de Juin, 1848; Jones's Andrieux's Mélanges Littéraires; Robertson's Michelet's La Mer; Cazamian's Michelet's L'Oiseau; Derocquigny's Poésies Choisies d'André Chénier; Delbos's Poésies Choisies de François Coppée.
By G. Philip & Son.—The Dale Readers, Book II.
By Rivingtons.—Robinson's Illustrated History of England, Period II., 1660–1907.
Calendars of Glasgow University, University of Manitoba, University College, Bristol, University of Leeds, St. Andrews University; Year Book of the Incorporated Society of Musicians.

COLLEGE OF PRECEPTORS.

PROFESSIONAL PRELIMINARY EXAMINATION—PASS LIST.

September, 1907.

The Supplementary Examination by the College of Preceptors for Certificates was held on the 3rd, 4th, and 5th of September, in London, and at five other local centres, viz., Birmingham, Bristol, Leeds, Liverpool, and Manchester. The following candidates obtained Certificates:—

Second Class [or Junior].

Honours Division.

Godding, H. C. *f.*	Osmer, T. S. *al.f.*
Moberly, A. V. *f.*	Roberts, G. H. *f.*

Pass Division.

Ackland, J. G.
Anderson, A. D.
Bendix, F. E.
Browning, R. J. S. *f.*
Charlton, P. C. *h.*
Cockcroft, W. L. *f.*
Cocker, J. P. *e.*
Collishaw, C. W. *al.*
Cooper, W. T. *f.*
Craig, G. R. *a.*
Evans, N. D.
Forrest, A. G. *ge.*
Fox, H. D.
Gaverick, R. H.
Glaisby, L. N.
Godding, F. C.
Gordon, M. *f.*
Harris, W. S.
Hunt, W. J.
Johnson, J. A. F.
Kebbell, W. F. V.
Kincaid-Smith, A. P. *f.*
King, G. B.
Langley, L. S. *e.*
Lawrence, F. W.
Lessey, J. G.
Lessey, W. *al.*
Lewis, S. R.
Matthew, A. W. *f.*
Meinertzhagen, F. *f.*
Millard, J. E.
Moore, G. K.
Morgan, A. D.
Morley, H. C. C.
Neeves, F.
Noll, M. G. *a.al.*
Noott, G. *f.*
Ord, G. *ph.*
O'Sullivan, P. J. *f.*
Paul, A. N.
Philips, C. H. *f.*
Phillips, E. A. *a.al.*
Phillips, P. G.
Pool, G. W.
Pritchard, G. P.
Ramsbottom, R. *f.*
Rawson, P. H.
Reidy, L. E. *f.*
Rowell, H. A. *f.*
Scott, D. C.
Shoesmith, H. P.
Slaughter, C. A.
Sutton, J. S. *f.*
Swift, E. E. *a.*
Taunton, T. J. *f.*
Taylor, K. G.
Tripp, J. E. H.
Vaisey, C. N.
Wade, E. W. *f.*
Watson, J.
Wedgwood, G.
Wickenden, S. *e.*
Williams, T. C. *f.*

N.B.—The small italic letters denote that the candidate to whose name they are attached was distinguished in the following subjects respectively:—

a = Arithmetic. *f* = French.
al = Algebra. *ge* = German.
e = English. *h* = History.
ph = Physiology.

COLLEGE OF PRECEPTORS.

CERTIFICATE EXAMINATION,

JUNE, 1907.

THE following is the list of the successful candidates at the Colombo, Krugersdorp, Lagos, and Rangoon Centres.

N.B.—The small italic letters denote that the candidate to whose name they are attached was distinguished in the following subjects respectively:—

a. = Arithmetic. *e.* = English.
al. = Algebra. *ge.* = German.
d. = Drawing.

The small figures [1] and [2] prefixed to names in the Second and Third Class lists denote that the candidates were entered for the First and Second Classes respectively.

Bracketing of names denotes equality.

BOYS.

FIRST CLASS [OR SENIOR].—PASS DIVISION.

Solomon, D. — Norris Coll., Rangoon

SECOND CLASS [OR JUNIOR].—PASS DIVISION.

[1]Aulavanthor, R. — Norris Coll., Rangoon
Akinloye, J. M. — C.M.S. Gram. S., Lagos
[1]Damodarum, S. — Norris Coll., Rangoon
Thiroovangadam, V. — Norris Coll., Rangoon
Perera, M. G. *al.* — Private tuition
Solanke, J. A. — C.M.S. Gram. S., Lagos
Mookerji, J. M. — Norris Coll., Rangoon
Wright, J. T. *al.* — C.M.S. Gram. S., Lagos
[1]Hin Po, T. — Private tuition
Shirkole, M. — Norris Coll., Rangoon
Veda, R. — Norris Coll., Rangoon
Oyekan, P. H. — C.M.S. Gram. S., Lagos
Pillay, M. — Norris Coll., Rangoon
Sivaramakrishna, T. — Norris Coll., Rangoon
Aiyede, E. K. — C.M.S. Gram. S., Lagos

THIRD CLASS.—PASS DIVISION.

[2]Olumide, C. A. — C.M.S. Gram. S., Lagos
[2]Ransome-Kuti, I. O. — C.M.S. Gram. S., Lagos
Pedris, D. G. *d.* — City College, Colombo
[2]Vaughan, J. C. — C.M.S. Gram. S., Lagos
Shomoye, E. O. — Private tuition
Charles, H. H. D. *a.* — Private tuition
Nagapillay, R. — Norris Coll., Rangoon
Armoar, G. C. P. — Private tuition

GIRLS.

FIRST CLASS [OR SENIOR].—PASS DIVISION.

Isaac, M. — Norris Coll., Rangoon

SECOND CLASS [OR JUNIOR].—PASS DIVISION.

Monee — Norris Coll., Rangoon
Abraham, C. — Norris Coll., Rangoon

THIRD CLASS.—PASS DIVISION.

Wehner, E. *ge.* — St. Angela's Comm. S., Braamfontein
Simmons, J. B. — St. Ursula's Coll., Krugersdorp
Watkinson, I. — St. Angela's Comm. S., Braamfontein
Wiltshire, N. B. *e.* — St. Ursula's Coll., Krugersdorp
Watkinson, A. — St. Angela's Comm. S., Braamfontein
Breda Van, M. — St. Ursula's Coll., Krugersdorp
Carey, C. — St. Ursula's Coll., Krugersdorp
Vogl, D. *d.* — St. Angela's Comm. S., Braamfontein
Vogl, G. — St. Angela's Comm. S., Braamfontein

LOWER FORMS EXAMINATION.

BOYS.

Chaube, L. A. — City College, Colombo
May, J. N. — St. Ursula's Coll., Krugersdorp

GIRLS.

Dollar, H. — St. Ursula's Coll., Krugersdorp
Harris, A. — St. Ursula's Coll., Krugersdorp
Henry, V. — St. Ursula's Coll., Krugersdorp
Miller, G. — St. Ursula's Coll., Krugersdorp
Oliver, F. — St. Ursula's Coll., Krugersdorp
Phillips, R. — St. Ursula's Coll., Krugersdorp
Raeburn, M. — St. Ursula's Coll., Krugersdorp
Singleton, J. — St. Ursula's Coll., Krugersdorp

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I.—A TUDOR GIRL'S EDUCATION.

J. L. VIVÈS: "DE STUDII PUERILIS RATIONE."

I PROPOSE to present in this article the essential points in the first document with which I am acquainted in English educational history on the education of a girl—at any rate, the first plan of education—written in England under the influence of the New Learning. It is, of course, in Latin. It was written at Oxford in 1523 by Joannes Ludovicus Vivès, a Spaniard, and this is, I believe, the first time that an extended version has appeared in English. I intend to translate the passages here omitted on some future occasion, when I hope to write on the remarkable Anglo-Spaniard at greater length. But many may be interested in the views of Vivès on the education of girls at this early date, and the following short extracts may prove more generally acceptable than a longer account.

John Louis Vivès was a compatriot of Catherine of Aragon, and came over to England under her patronage—at any rate, to some extent. He was born at Valentia in 1492. In 1517 he was made one of the first Fellows of Corpus Christi College, Oxford. He was called to lecture in Oxford on law and rhetoric. King Henry VIII. and Queen Catherine are said to have gone to Oxford to listen to him lecturing. Vivès wrote the short treatise which is the subject of this article for the royal princess Mary, afterwards Queen Mary I. Its title is "De studii puerilis ratione." Vivès's opinions were entitled to high respect in his day. Erasmus, Budaeus, Vivès were, in contemporary estimation, a literary triumvirate which included the highest intellectual reach. They had entered into the spirit of the revival of classical learning. They were the leaders. Vivès has dropped out of this associateship in later estimates of the period. Why this has happened cannot be inquired into in this article. It is sufficient here to present his plan of studies as an early Tudor ideal of a girl's education on its own merit. Perhaps, however, I may be permitted to suggest that the following are important features of Vivès' plan.

1. A high moral standard. Literature, as a subject in education, is to be regarded as character-forming. Nothing but the really excellent should be offered. Hence Vivès considers the material of Latin authors is the highest consideration; not merely form and style. Quick, for instance, characterizes the Renaissance spirit as laying supreme emphasis on style, and consequent neglect on subject-matter. This "defect," as Quick terms it, of the Renaissance does not apply to Vivès. On the other hand, Vivès has to meet the adverse criticism of classicists that, through stress on the subject-matter of the Latin writers he recommends, he includes writers who are non-classical and he excludes writers of the first importance in classical worth.

2. Vivès is emphatic in the demand that the pupil shall learn Latin to use it as a medium of conversation. He thus requires close attention to phrases and the evaluation of what is adequate and elegant, for comparison of the materials of speech, and all the pupil's storage is with a view to use in expression—particularly oral expression.

3. The writing of Latin is an active, not passive, exercise. The practice of keeping paper books which he recommends long before Ascham for Latin words, phrases, *dicta*, *sententiae*, passages, and so on is entirely viewed as a method of exercising the pupil's own choice of what is fitting and excellent. It is essentially a negative to dictation exercises in which the tutor exercises *his* activity of mind and thought. Throughout Vivès keeps his mind intent on the pupil's point of view and the exercise of the pupil's activity. Hence Vivès is essentially among the modern educators, and classics are to him a discipline

calculated to stir the best energies of the pupil, as science is to-day the material on which so many teachers think to get the best mental discipline. In other words, Vivès was a heuristic Latinist in his pedagogy.

4. It follows that Vivès regards grammar as subordinate entirely to the reading of authors. You establish your grammar rules by observation of authors. Grammar is merely an epitome of the grammatical facts and constructions you find in your authors, not an independent study which exists as an absolute sovereignty of itself.

PLAN OF A GIRL'S STUDY.
("De studii puerilis ratione," 1523.)

JOHANNES LUDOVICUS VIVÈS
To the Lady CATHERINE (*Queen of England*), *his unique* (*unica*) *protectress.*

You have ordered me to write a brief plan of study according to which thy daughter Mary may be educated by her tutor. Gladly have I obeyed thee, as I would in far greater matters, were I able. And since thou hast chosen as her teacher a man above all learned and honest, as was fit, I was content to point out details as with a finger. He will explain the rest of the matters. Those questions which I thought either obscurely treated or omitted by writers on the art of grammar I have noted somewhat copiously. I pray Christ that this plan of teaching may effectively help thy daughter to her erudition and virtue. Farewell, and know my mind most devoted to your Majesty.

Oxford, Nones of October, 1523.

Pronunciation.

Let the princess learn thoroughly the sounds of the letters and articulate them correctly, for it is a matter of no small importance in the course of instruction *how* she has learned to articulate elementary sounds and syllables. Let her know that some letters are vowels, others consonants, and how many there are of this and that kind, and why they are so called. Also, that of the consonants some are mute—*i.e.*, those which begin with their own sound and end in a vowel, as *b*, *c*, *d*. They are thus termed because, if they stand alone and are not followed by a vowel, they become mute. Others are called half-vowels, and of these some are liquids, as *l*, *m*, *n*, *r*. Then two of the vowels, *i*, *u*, pass over to the consonants, when they are followed by a vowel, with which they are joined in sound, as *vino*, *Iuno*, *conjicio*, *vinum*, *vulpes*. In Greek words the *iota* never becomes a consonant; neither Iacobus nor Iohannes have *i* as consonant. The consonant *u* in this language is *beta* (*β*). The vowel *u* is *οῦ* diphthong. Therefore it is usual to write the vowel *u* as *y* on account of the Greek *υ*, which with the Latins often becomes *u*, as *Sylla*, *Sulla*, *Tybur*, *Tubur*, and the consonant *u* as *u*, on account of the Greek *β*. A syllable is the joining together of several letters, but from a vowel alone a syllable can be formed—*e.g.*, *Maria*, *Iesus*.

Then let her learn that a syllable consists either of a vowel standing alone, or of a vowel and consonant, or of a vowel and consonants. Without a vowel no syllable, and as many syllables as there are vowels. From the vowels four diphthongs are formed: two written and pronounced, two written and not pronounced unless the sound is a little stronger (*crassior*) than the single vowel alone. The same should be shown in the Greek letters, so that she may know how to pronounce correctly in either language. These matters must be instilled and inculcated, so that she sound letters and syllables rightly, until there remains no error in her speech.

Parts of Speech.

Then let her learn in the Latin language there are eight parts of speech, four declinable and four indeclinable. In the declinable are those words which express that something is done. These words are inflected according to moods and tenses, and are called verbs. Those which are declined in cases and express that something took place in time are called participles. Fifteen of the words declined in cases are pronouns; the remaining words thus declined are called nouns. Of the indeclinables, fifty are prepositions. Those words are called conjunctions which join, and, as it were, bind together, parts of speech—formerly they were called *convinctiones*. Words which express a sudden affection of the mind are called *interjections;* the rest of words are called *adverbs*. All these matters, however roughly and crudely pointed out by us, and so also all the other questions in this little book, are only, as it were, hinted at, rather than expounded by us with that exactitude which they need in actual teaching.

Writing.

Amongst these topics of instruction time should be found for the formation of letters in writing, not so much with a view to elegant as to swift writing, so that she may write down with her fingers anything the tutor may dictate. If she read an author, and either a word or opinion please her, let her jot it down; for those things stick in the memory which we have written with our own hand, rather than what is written by another's. Whilst we are writing the mind is diverted from the thought of frivolous or improper objects. The lines which are put before the pupil for imitation should contain some weighty little opinion (*sententiolam*) which it will be helpful to learn thoroughly; for by frequently writing out such they will necessarily be fixed in the mind. Therefore care should be taken that at the outset in transcription it was written with strict correctness.

Memory.

Let her exercise her memory daily, so that there be no day on which she has not learned something thoroughly. So thereby her wit will be sharpened, and she will prepare her memory to become easily responsive and ready for her own use, and that most firmly, so that whatever she shall want her memory shall hold her back from nothing. Those things which are grasped at that age will remain with her all her life. To begin with, at night, on going to bed, let her read and re-read twice or thrice closely what she wishes to give in charge to her memory, and on the next morning ask herself for it again.

[The following sections are on the inflexions of nouns, on verbs, syntax, participles, verbal nouns. These I omit here.]

Anomalous Terms.

Let her learn what verbs have participles, and in which verbs participles are lacking, and which verbs follow the ordinary rules of inflexion, and which do not. Also those verbs which are called anomalous or defective, as *aio*, *inquio*, *quaeso*, *salve*, *vale*, and those which have mixed conjugation, as *fero*, *tuli*, *latum*. Afterwards, let her learn those verbs which have varied forms of construction—*i.e.*, which may be used with varied cases, as *recordor hanc rem* and *illius rei; postulo te huius criminis*, and *de hoc crimine*. On this subject Antonius Mancinellus has written a little book which he called "Thesaurus." When all these matters have been once generally expounded (for it is not necessary that they should be treated with minute detail), then the "Grammatical Compendium" of Thomas Linacre may be used, and also the little book "de Constructione," by Melanchthon (which was once circulated under the name of Erasmus). At the same time, also, Erasmus's "Colloquies," either as a whole or in part, as selected by the tutor, may be brought into requisition.

Vocabulary.

From Erasmus's "Colloquies" she will retain in memory some expressions and formulæ of speech, of which she will make use in daily converse. Whereupon it will be expedient to ask herself these, so as not to let them fall away from memory, and she should be bidden to use them in conversation with others. Dialogues should be written for her on those things which she requires daily to concern herself about, so that she may be accustomed to name them in Latin, *e.g.*, clothes, parts of the house, food, divisions of time, musical instruments, house furniture. The right and original significations of words will be explained to her, so that she does not use improper terms. Then let her note the differences in meaning of words which seem similar, and the agreements in those which seem dissimilar. In this task it is not desirable to study the whole of Laurentius Valla, but some excerpts from him, such as those which Nebrissensis or Antonius Mancinellus collected. But great watchfulness is necessary that the tutor should prevent the frivolous, or the ill-considered, or the false from being learned. For of this kind there are far from being few passages in Valla, Nonius, Servius, and Donatus. This is particularly the case in Aulus Gellius. Further, let the princess also learn the etymologies of many words. She will then more truly and certainly understand, remember, and be delighted by this knowledge in many ways. There lies hid in this kind of knowledge much experience. Etymologies, if only treated rightly and with accuracy, would put aside many frivolous and ridiculous ideas which were held in the time of our fathers and forefathers, who accepted what they were told on this subject, being thoroughly unacquainted with Latin and Greek speech. Let the Princess note those barbarous words which have usurped dominion through their use by the uncultured. They are,

indeed, Latin words, but have a quite different signification from that with which they are now used.

The Practice of Writing Latin.

Let her begin to turn short passages (*oratiunculas*) from English into Latin. At first they should be easy; then, by degrees, more difficult, in which there should occur all kinds and forms of words. Let these partly be serious and religious, and in part joyful and courteous.

Authors.

At the same time, with her writing, let her learn the Distichs of Cato, the Mimi of Publius Syrus, and the Sentences of the Seven Wise Men, all of which have been collected together in the same little book of Erasmus, and explained by him. Let her learn thoroughly some of those Sentences—those, namely, which are particularly useful in life—that she may have them in mind afterwards, as it were, antidotes, whatever happens, whether it be of fortune or misfortune. Let her accustom herself at this tender age to hold her opinions truly and sincerely, that she may only think those things good which are true—*e.g.*, the virtues and erudition; those things bad which are so truly—viz., vices, ignorance, and foolishness; lest she take evil for good, or contrariwise; lest she be captivated and stirred by slight and fickle things instead of great ones; lest, in a word, she hold the great and precious as vile. Let her be given pleasure in stories which teach the art of life. Let these be such as she can tell to others—*e.g.*, the life of the boy Papirius Praetextatus in Aulus Gellius, of Joseph in the Holy Books, of Lucretia in Livy, of Griselda and others, as found in Valerius, Sabellicus, and other writers of the same kind—stories which tend to some commendation of virtue and detestation of vice. Let her have a dictionary, Latin and English, which she may often consult, and get to know what each word signifies. When she does not understand anything let it be explained by a teacher. Let her not learn words of disgraceful and improper matters. Neither let her read them, if it is possible, nor hear them. Let her provide herself with a little book of blank paper, in which, with her own hand, she may write little sentences which she will commit to memory, and which will serve her as an encheiridion.

[Then follows a return in more exact detail to former grammatical points.]

Latin Conversation.

Let the princess speak with her tutor and fellow-pupils in Latin. Of fellow-pupils let her have three or four; for it is not good to be taught alone. But do not let them be many, and let the few be most carefully chosen and most piously and liberally educated, from whom she will not hear or learn anything which would injure her morals; for goodness (*mores*) ought to be the first care. Let her be stimulated now by small rewards, now by emulation. Let her herself be praised, and let others be praised in her presence. Let her attempt to express (in Latin) what she has been reading in her authors, and in the same manner let her listen to others speaking of what they have been reading. To those whom she thinks to be learned let her give most close attention, and so let her herself speak; for this is *imitation*—a method of no small usefulness, especially in a tender age which takes to nothing more willingly or to better purpose than imitation. But not only should she imitate the words, but also all pronunciation, so as not to err in correct accent.

[Then follows a paragraph on correct accent, and its more general rules in Latin speaking.]

Annotations.

Let her get a somewhat large note-book (*librum vacuum*) in which she may jot down with her own hand, first, words if (whilst reading important authors) she comes across any words useful for daily conversation, or rare or elegant words; next, let her note forms of speaking, expressions which are witty, graceful, neat, erudite; next, examples of *sententiae*, weighty, amusing, deep, polite, imaginative, and actual, from which she may seek example for her life. Let her note also where, and in what manner, the rules of grammar are kept, and where neglected. For the grammatical art is born out of the practice of authors; so this is to be preferred in authority to the grammatical art itself when the two (the practice of authors and the rules of grammatical text-books) differ. Yet the art of grammar is necessary whilst it gathers its rules from observation as to what is the right and correct way to speak.

Authors.

The authors in whom she should be versed are those who at the same time cultivate right language and right living: those who help to inculcate not only knowledge, but living well. Of this kind are Cicero, Seneca, the works of Plutarch (the last named has been translated into Latin by several hands), some dialogues of Plato—especially those which concern the government of the State. Then the epistles of Hieronymus and some works of Ambrosius and Augustine should be read. Further, the "Institutiones Principis," the "Encheiridion," the "Paraphrases," and many of the works useful to piety, and the "Utopia" of Thomas More. With no great trouble she can learn history from Justinus, Florus, and Valerius Maximus. With all these, both when she gets up in the morning and goes to bed at night, let her read each day something from the New Testament—the passages to be suggested by the tutor. There are also Christian poets whom it will be pleasant and fruitful to read, such as Prudentius, Sidonius, Paulinus, Arator, Prosper, Juvencus. In many places these writers vie with many of the ancients in the elegance of their verse, and, as for their matter, they are as far superior as good is to evil and the divine is to the human. Nor are the heathen poets to be entirely dismissed—Lucan, Seneca the Tragedian, and a good part of Horace. When she reads these let her have in her possession a vocabulary of the Latin language—viz., Calepinus or Perottus—to which she may refer as to a Latin word.

This is only, in my view, a rough sketch of studies. Time will admonish her as to more exact details, and thy singular wisdom will discover for her what they should be.

THE SCHOLARSHIP SYSTEM.

A BRITISH ASSOCIATION SYMPOSIUM.

I.—ITS PRINCIPLES AND RESULTS.

By Prof. M. E. Sadler, University of Manchester, and Mr. H. Bompas Smith, Head Master of King Edward VII. School, Lytham.

The paper of which this is a summary is the outcome of an inquiry conducted by the authors in different parts of England during the summer of 1907, with the help of officers of Local Education Authorities and of head masters, head mistresses, and other teachers in elementary and secondary schools.

The scholarship system is a distinctive mark of English education. Its beginnings date from the Middle Ages. Its modern developments are connected with the growth of competitive examinations, upon which it largely depends. There has always been in England a readiness to help forward youths of exceptional promise to intellectual opportunities appropriate to their powers. But there has also been a great reluctance to place secondary and higher education under the direct control of the State, and consequently a preference for a variety of semi-independent schools representing different social traditions and points of view. These two facts in combination resulted in the scholarship system, to which in the mid-Victorian era the general belief in the benefit of open competition gave a wider vogue. During the last generation, however, new forces have subjected English educational arrangements to a heavy strain. Improved higher education had become on civic and economic grounds a national necessity. New sections of the community were demanding access to secondary schools. It became necessary, therefore, either to extend the scholarship system or to embark upon the policy of free, or nearly free, secondary and higher education in institutions under direct public control. The latter policy would have been wasteful of existing educational resources. Nor is the remission of school fees sufficient by itself to enable the poorest scholars to postpone the time of their entrance into wage-earning occupations. Maintenance allowances are also necessary. The scholarship policy has enabled the Local Authorities established under the Education Act of 1902 to meet, in the quickest and most economical manner, the demand for extended facilities for secondary education, a demand accelerated by new Government regulations for the training of pupil-teachers. The fact that many of their pupils pay fees has enabled the secondary schools to carry on their work with less public aid than would otherwise have been necessary, and more public money has thus been made available for maintenance allowances. Thus, through the rapid extension of the scholarship system, which links together schools of different types under the general supervision of public authority, much has been done within the last five years to construct a framework of national education.

The five chief branches of the English scholarship system are: (1) scholarships tenable at Universities or other places of advanced education; (2) scholarships tenable at the great secondary boarding

schools ("public schools"); (3) junior scholarships from the public elementary schools to the secondary day schools; (4) intermediate scholarships enabling pupils to prolong their secondary education; (5) scholarships tenable at evening schools and classes.

The new regulations for the payment of Government grants to secondary schools may greatly affect the present situation. But the scholarship system has, at any rate, served as a useful expedient in a time of rapid social change. There is some reason to think that the offer of junior scholarships has been two profuse. Improvements in the elementary and secondary schools themselves are far more important than an indefinite increase of facilities for the transference of children from the one to the other.

Results.

The following have been the chief results of the working of the scholarship system as it has developed in England during recent years:—

(1) The scholarship system has made the English Universities, old and new, the educational goal of hundreds of students of good ability who under former conditions would have been shut out from academic studies.

(2) Many boys and some girls of exceptional ability have been helped forward to high academic distinction.

(3) A large number of boys and girls from public elementary schools have been enabled by means of scholarships to obtain access to secondary schools. This has been especially the case during the last five years, in consequence of the operation of the Education Act, 1902, and the requirements of the new regulations for the training of pupil-teachers.

(4) In some cases the provision of junior scholarships of small value has been in excess of the needs of the situation. With this has occasionally gone a tendency to fail in giving sufficiently prolonged or ample help to the handful of pupils who show very marked ability or promise. To secure for large numbers of children of average powers a somewhat longer education than they would otherwise have received is an excellent object, if the education so given is appropriate to the children's needs. But a scholarship system may, in the long run, prove socially deleterious if it gives brief but widespread encouragement to merely average ability without at the same time taking special pains to secure the opportunity of long and thorough training for carefully selected individuals of unusual capacity. And a scholarship system is economically vicious if it imposes a disproportionate share of the burden of taxation upon cultivated families with slender incomes without at the same time providing for such families educational opportunities of an intellectual quality appropriate to their needs.

(5) To a limited extent scholarships have bridged over the gulf between lower and higher secondary education, a gulf which, in England, is social as well as intellectual.

(6) The scholarship system has virtually failed to span the gap between the public elementary schools and the great public (boarding) schools. The latter are mainly fed from a special type of preparatory school. But many clever boys whose parents can give them the intellectual preparation afforded by such preparatory schools are enabled by scholarships to obtain a public-school education at a greatly reduced cost. And it appears that, in the majority of cases, these boys could not be sent to public schools of this kind without such pecuniary help.

(7) A lopsided development has recently been given to the scholarship system through the administrative need of securing large numbers of recruits (chiefly girls) for the elementary school teaching profession. Apart from this, the claims of girls are still less liberally recognized than those of boys.

(8) The records kept of the later careers of scholarship holders are at present inadequate. Such evidence as is forthcoming points to the conclusion that an overwhelming majority pass into literary, clerical, and other non-industrial callings. This would suggest that the scholarship system, as at present organized, fails to select and reward a due proportion of boys and girls whose abilities are practical and constructive rather than literary or purely scientific.

(9) A chief motive in the English scholarship system has been the benevolent desire to give every clever boy (and, more recently, clever girls) a chance of individual advancement through higher education. But less thought seems to have been given to the practical question: What kind of secondary and higher education is best suited to the special aptitudes of each individual scholarship winner? As the dominant tradition in the older form of secondary education for boys has been fixed by the requirements of literary callings, many of the secondary schools which are justly held in high esteem are not necessarily in a position to give the most suitable training to all the pupils for whom a slightly prolonged education is now desired. The experience gained through the working of the present scholarship system is revealing the lack of adjustment between some traditional courses of study and the intellectual and social needs of modern life. To remedy this defect new types of secondary-school curriculum are needed.

(10) The scholarship question should be looked at from a national point of view—not only from the standpoint of the personal advantage and preferment of the individual scholar. The fundamental purpose of a scholarship system in all its grades and branches is the direction of ability towards those callings in which the individual scholars are best qualified by natural aptitude and by physical stamina to render valuable service to the nation. But hitherto there has been some tendency to give preferential treatment to the recruiting of the more literary professions.

(11) The English scholarship system has worked fairly well in a rough sort of way during a period of rapid social change and of resulting educational development. But in itself it is no sufficient substitute for a coherent system of higher education, intellectually efficient in all its grades and practically adjusted to the needs of a modern community.

Reforms Needed.

(i.) Our fundamental needs are the reform of the elementary schools, both in town and country, and the provision of new types of secondary-school curriculum. The conditions under which the vast majority of English elementary-school teachers are at present obliged to work prevent them from giving a sufficiently individualized training, moral and intellectual, to the children committed to their care. The improvement of the elementary school will secure for the children the kind of early training which will best enable the more promising of them to take advantage of advanced courses of study. It will also tend to lessen the social cleavage which at present destroys the unity of English education in its elementary stage. But any effective improvement will be very costly, and necessarily slow in operation. The necessary counterpart of the reform of the elementary school will be the increased differentiation of the secondary schools and the better adaptation of their curricula to modern needs. Nearly all the secondary day schools in England need more generous financial assistance in order to attain a new measure of intellectual efficiency.

(ii.) The English scholarship system in its present form gives special advantage to urban districts. It fails adequately to meet the needs of promising children living in the country. These are often prevented by distance or expense from gaining access to a secondary school. In some cases more boarding scholarships are needed. Secondary "tops" should be added to some centrally situated rural elementary schools.

(iii.) Much more should be done to provide higher secondary education of first-rate quality in day schools in many smaller towns. There is a danger of higher secondary education becoming (outside a few favoured centres) the privilege of the well-to-do. The new regulations for secondary schools increase this danger. Government grants at a considerably higher rate are needed for higher secondary schools and in aid of higher secondary "tops" in other carefully selected secondary schools.

(iv.) There is need for a more generous provision of intermediate and higher scholarships to enable pupils of special ability to complete the full course at a higher secondary school or to proceed to an institution of University rank or of advanced professional training. For girls especially more higher scholarships are required, tenable at a variety of institutions for academic or practical study.

(v.) The fixed value of the scholarships awarded by open competition at the public schools and Universities might well be reduced. Ample supplementary allowances should be given to those scholars who need them, after private inquiry into the circumstances of each case.

(vi.) Methods of selection which set a premium upon cramming and lead to the neglect of the candidate's health and physique should be sternly discouraged. The best examinations now conducted for junior scholarships are confined, so far as written tests are concerned, to papers in English and arithmetic. The written examination should, where numbers are not too great, be supplemented by a simple oral test. The examiners should also have access to the pupil's school record. Stress should always be laid upon physical fitness. Each local scholarship system might thus become an incentive to the healthy up-bringing of children by making a fair standard of physical development a condition of eligibility.

II.—AT OXFORD AND CAMBRIDGE.

By Dr. H. B. Baker, F.R.S.

The present system of open scholarships at the older Universities owes its existence to Richard Jenkyns, Master of Balliol, 1819–1854. Until about eighty years ago help was given to students in two ways. There were scholarships confined to particular schools, districts, or families, and there were servitorships or sizarships, the holders of which did not necessarily possess very high intellectual qualifications, but who were essentially poor men. Jenkyns's system was the offering of scholarships, after a competitive examination, to schoolboys without any reference to the question as to whether the

money was or was not needed for their University education. The status of scholars was improved, and they were made to rank in the college immediately after the fellows. In a short time many of the most brilliant boys in public schools were attracted to the Universities, and, what was more important, there was an improvement in the work of the schools which benefited not only the prospective scholars, but also the rank and file of the school. The competition for open scholarships is, perhaps, keener in our own day than it has ever been, and the success of a school is now gauged—quite wrongly, in my opinion—by the number of open scholarships it can claim at the end of the school year.

It has been several times suggested during the last few years that the scholarship system involves a great waste of money, and schemes have been proposed which, while retaining the stimulus of competition, give the money only where it is needed. This seems the only logical position, and, were the question as simple as it sounds, few would hesitate to adopt one or other of the solutions. The most recent of these proposals is briefly this: that all entrance scholarships should be of the value of £40 a year, and that they should only be increased when the parent could prove that the increase was necessary. On the face of it the proposal seems reasonable, with the one exception that the giving of £40 a year to a scholar who does not need it seems a half-hearted measure.

Exaggerated statements of the waste of money given in scholarships are so often made that an attempt to arrive at an approximation to the facts should be of interest. The heads of all colleges at Oxford and Cambridge were asked to give an estimate of the proportion of their scholars during the last ten years who could have afforded to reside at the University without the aid of their emoluments. Acknowledgment is gratefully made of the kindness of these gentlemen and of the tutors of colleges in compiling the statistics which it is now possible to bring before the Section. The estimates show that at Cambridge 17 per cent. of scholars could have resided at the University without their scholarships, while at Oxford the proportion is only 6 per cent. But, even in many of these few cases, it was very largely the opinion of my correspondents that the money given in scholarships was not misused. The head of the college at Oxford which had apparently the largest percentage of wealthy scholars pointed out that they were largely sons of professional men whose incomes are uncertain. In these cases, if the father happens to die during his son's University career there is no possibility of the boy's education being completed without external aid. Many have pointed out the difficulty in dealing with the figures supplied by parents with the object of proving poverty. Others consider that if scholarships were made purely eleemosynary the status of scholars would immediately fall, and a condition of things spring up which exists, to their great detriment, in some of the American Universities. It must be remembered that the social life of the older Universities is one of the most important things to a youth, and anything which would tend to diminish its educational value is much to be deprecated. Considering the disadvantages which the new scheme presents, I would advocate two alternatives. First, let there be a voluntary relinquishment of the emoluments of a scholarship by a wealthy parent, the other privileges of the scholar being retained. It would soon become a point of honour for a wealthy man to refuse to accept money which would be so useful to poor men. Second, let a former scholar who has attained in later life to a position of comparative opulence pay back his scholarships in some way or other for the help of other poor scholars. With regard to the first of these proposals, I may point out that it is occasionally carried into effect. At one Oxford college six out of twelve wealthy scholars have during the last ten years refused the emoluments of their scholarships, and isolated instances have occurred at other colleges. With regard to the second proposal, *cum veniret ad pinguiorem fortunam* (when a man has attained to fatter fortune), as the St. Andrews statute has it, he should pay back the money which was the foundation of his fortune. This also is done, and perhaps more often than is known. Occasionally the whole sum is paid back to a college, but more frequently the former scholar, out of the not very fat fortune of a schoolmaster or college tutor, pays the sum back in helping poor scholars at the University.

Either of these systems of relieving college funds would, if backed by the force of public opinion, relieve an amount of hardship and poverty which is scarcely realized by any who have not been either poor scholars themselves or been brought into intimate contact with them. The cost of living varies very greatly at different colleges. It is possible to live with economy at many colleges on £120 a year. Two of my own pupils at Christ Church have managed with self-denial to limit their expenses to £110 a year. Since an open scholarship is £80 a year, and school leaving exhibitions may give a man another £20 a year, it is not difficult to see that the very poor man has still need of assistance. Most colleges have an exhibition fund from which grants are privately made to the poorest students, and any one who is willing to pay back his scholarship, by the help of which it may be he has attained a good position, could hardly do better than contribute the money to such a fund.

III.—CRITICISMS AND SUGGESTIONS.

By the Rev. A. A. David, Head Master of Clifton College.

The scholarship system is at present based on two general principles. The first and original principle is the assistance of those who can prove their fitness for higher education, but without monetary aid would be unable to avail themselves of it. It is somewhat remarkable that, in a country not specially inclined to respect intellectual distinction as such, the position of the "poor scholar" has developed into one of honour. This leads to the second principle, which is the recognition of superior ability and attainment by means of a special status, carrying with it a fixed emolument.

The difficulty of the existing situation is largely caused by the fact that these two principles are in confusion. Open competition has naturally resulted in the bestowal of emoluments on candidates who distinguish themselves in the examination, but may or may not be deserving of financial assistance.

In devising a solution of this difficulty two things must be borne in mind. First, it is most important that students needing such assistance should not be separated from those who deem the distinction worth winning for its own sake, but cannot, except in a very few cases, bring themselves to refuse the emoluments. Secondly, it is important that the distinction should not be entirely dissociated from the money grant which seals its value.

A possible reform would be to reduce the money value of all scholarships to something quite nominal, but sufficient to serve as a symbol of the intellectual distinction.

The remainder of scholarship revenue might then be converted into augmentation funds from which grants would be made privately in full proportion to need. Experience already gained in administering small funds both at school and University shows that such an augmentation of nominal scholarships, though involving delicate investigations and sometimes difficult decisions, would not be impracticable even on a very large scale.

IV.—SCHOLARSHIPS FOR GIRLS AT SECONDARY SCHOOLS.

(1) By Miss S. Heron,
Head Mistress of the Wyggeston High School for Girls, Leicester.

In this paper the scholarship system was considered from the point of view of the secondary school into which girls are received from the elementary school.

The *age of admission* should be not later than twelve.

The *method of selection* of junior scholars should include nomination by the head teacher of the school from which the girl comes, proving her to be suitable in ability, conduct, health, and home conditions for more advanced work and a wider curriculum. This should be followed by a written examination, held by the staff of the secondary school into which the girl is received, in arithmetic and English, and this paper test must be supplemented by an oral examination as well as by a medical examination of the best candidates.

For intermediate scholars the examination held by the Joint Scholarships Board should be superseded by some recognized examination taken in the ordinary school course, *e.g.*, the Junior Oxford or Cambridge Local.

For senior or leaving scholarships the candidates should have taken some certificate qualifying for admission to a University before leaving the sixth form.

The *monetary value* of junior scholarships should cover school fees, books and stationery, and travelling expenses (if any), with a small margin for incidental outlays. The value of intermediate scholarships should be about half as much again, to provide a maintenance grant and to induce parents to keep a suitable girl at school as long as they can afford it.

The *rejection of the unfit* should be done as early as possible and without hesitation; but, if the method of selection is thorough and careful, not many scholars, once entered, will prove unsuitable. The most usual reason for such unfitness is previous "cram," but a wise entrance examination will detect this evil.

Conditions of award.—Scholarships ought not to be confined to pupils from any special class of school, but should be open to all girls whether previously educated in elementary or private schools or at home. Some should be awarded to girls already in the secondary school who show sufficient merit and whose parents have slender means.

The *duration of tenure* of junior scholarships should depend on periodical reports, but should be generously extended from year to year to satisfactory scholars up to the age of sixteen, *i.e.*, for at least four years.

Intermediate scholarships should be given to a judiciously selected number of junior scholars who have passed a qualifying examination proving them to be able to profit by remaining at school till the age of eighteen. These, again, should be followed up by senior or leaving scholarships for the few who wish to go to the University.

Treatment of scholars.—Scholarship-holders should be welcomed in the secondary school as keeping up a high standard of work and conduct, and helping to break down any tendency to foster class distinctions. Each girl should stand on her own merits, independently of social position or creed. No difference should be made in any way between fee-paying and non-fee-paying pupils, unless it be to bring forward the latter, who by industry or ability have won free places.

(2) By Isabel Cleghorn, L.L.A.

In directing attention to existing scholarship schemes it is well to ask whether they are always of the right kind, awarded to the right children, in the right manner, and leading in the right direction.

The true purpose of any scholarship system should be to give children of special ability the opportunity of continuing their education on the best possible lines. As, in ordinary circumstances, the poorer parents are unable to keep their children at school beyond the age when they may reasonably expect them to begin to add to the family income, it is necessary that there should be a full and complete system of maintenance scholarships, so that specially gifted children from the elementary schools should have every possible chance of developing all that is in them for the good of the community at large. With regard to scholarships for girls, differentiation must be made between two kinds; the one generally known and fairly freely given already, the other scarcely as yet recognized as necessary, but in reality equal, if not superior, in importance for the future well-being of the social and industrial side of our life as a nation.

I. Those of the literary type leading from the elementary school proper to the higher elementary, the municipal secondary, the grammar or high school, or the pupil-teacher centre.

Such scholarships are fairly numerous, but very unequally distributed. Many of them are ear-marked for the teaching profession—a system to be deprecated—and many of them are scholarships only, prohibitive to the children of the labouring classes who find themselves unable to provide the necessary maintenance while the scholarship lasts.

But, besides the necessity for providing a liberal number of maintenance scholarships for the intellectually endowed children from our elementary schools, it is also essential that the "corridor" from the one school to the other should not only be widely open, but that the curricula of the two schools should be so co-ordinated that the one should form the natural entrance to the other, and the names "primary" and "secondary" be realities and not unmeaning titles. Such scholarships should not be awarded on written examinations only, but depend also on the recommendation of the primary teacher and in some cases on a joint oral examination conducted by the head teachers of both the elementary and secondary schools.

II. Practical scholarships leading girls from the elementary school to some form of domestic or industrial training.

These should never be awarded on a written examination. They should depend, not on the power to write well, spell correctly, and describe clearly in accurate English, but should be bestowed on the girl of faculty, the bright, intelligent, but not especially intellectual girl whose senses are alert, who has the true eye, the delicate touch, the power to *do*.

It is quite as necessary to prepare the future wife and mother for the duties of home making, the future workwoman for the labour of the workshop, the future servant for the routine of the kitchen, as it is to help the future teacher to obtain the knowledge to enable her to fulfil the duties of the schoolroom.

All work is sacred, and true education helps people to live their lives so as to get and to give the greatest possible amount of good.

Education that carries children forward into their future work in the world, be it brain-work or work with the hands, is "secondary," and therefore equal facilities should be given to both. Up to the present, only London, a few of our large provincial cities, such as Gloucester and Bradford, and two or three philanthropic firms, such as Rowntree's of York and Cadbury's of Bournville, have seriously undertaken the provision of this kind of secondary education. In London the polytechnics, the technical institutes, and trade schools are doing magnificent work, while many of the elementary schools possess cookery, laundry, and housewifery centres where really good practical teaching is given.

To the polytechnics and technical institutes some three or four hundred L.C.C. maintenance scholarships are given annually, by means of which girls from the elementary schools receive twelve months' instruction in domestic subjects, while some eighty additional scholarships, awarded on special aptitude, carry forward the best of these girls into the trade schools, where under skilful and competent teachers they specialize in such work as dressmaking, corset or waistcoat making, upholstery, tailoring, or art needlework.

The spread of such secondary education is one of the necessities of modern times, and when this is fully recognized by Education Authorities throughout the country a liberal supply of scholarships for the same should follow as a matter of course.

V.—AS AFFECTING PREPARATORY SCHOOLS.

By G. Gidley Robinson, M.A.

Entrance scholarships at the public schools are of great importance to preparatory schools, both from the financial and from the educational point of view.

(i.) *Financial.*—Candidates from preparatory schools are by no means necessarily sons of wealthy people. The parents often make self-sacrificing efforts; the schoolmasters do much to help them. For many such boys scholarships are an inestimable boon or even necessary. On the other hand, parents who do not need scholarships are keen to get them; for competition stimulates a boy to do his best, and, if successful, he makes a good start and is not overlooked in the crowded world of a public school. If elected on the foundation at Eton or Winchester he has the advantage of living among a picked lot of clever boys. Sometimes scholarships are declined by wealthy people for their sons; but generally they are regarded as prizes, not as eleemosynary endowments. As a step towards creating a public conscience in the matter, why should not the face-value of scholarships be reduced to, say, the amount of the tuition fee, and only increased on the application of the parent? This would be a matter for private negotiation, and would leave no stigma of poverty on the scholar. The moral effect of such a reform, if required by general statutory enactment, would probably be great.

(ii.) *Educational.*—Scholarships are offered by the public schools in order to attract clever boys who will win honours later on at the Universities and elsewhere. The system encourages early specialization, especially in classics. Hence an undue proportion of the timetable in preparatory schools is devoted to Latin and Greek.

Scholarship examinations are at present the only public test of work and teaching in these schools: they set a standard, and so render an important service. On the other hand, they dictate the curriculum for all boys, dull as well as clever. The latter can always take care of themselves; but for boys of small linguistic ability the curriculum is overburdened with languages, and is therefore one-sided and unsatisfactory. It should be framed from the point of view of the boy whose aptitudes have to be discovered—*i.e.*, provide for many-sided interest. This is good for the scholar and essential for the boy of average ability. Ordinary abilities, backed by moral qualities, do some of the world's best work. We cannot therefore afford to neglect them in favour of specially-gifted boys.

The time necessary for a wise re-djustment of the curriculum can only be found by postponement of Greek and Latin verse. This might be done without any violent changes of methods and standards. And it is necessary to "hasten slowly"; for there are rocks ahead in the question of the supply of properly qualified teachers.

VI.—FROM THE ELEMENTARY SCHOOL.

By A. R. Pickles, M.A., B.A., President of the National Union of Teachers.

(*a*) *School Relationships.*—In view of the rapid increase of municipal secondary schools and of the modernizing of many of the older foundations, and especially in view of the most recent pronouncements of the Board of Education in favour of a broadly democratic scheme of higher education, it is of importance to define the precise relationship between the primary and the secondary school systems, in order to be able to discuss a scholarship system with any real profit.

(*b*) *The Aim of the Primary School.*—The old conception of the primary school as a place for teaching poor children "the three R's," along with a smattering of history and geography, has happily receded, giving place to the new conception, which regards these schools as places for the formation of right habits, for the cultivation of thought and intelligence, and for fashioning the tools of learning. To regard a child's education as completed at the close of the primary-school period is an absurdity. He may, by imitation, by the aid of a retentive memory, and by an oftentimes puzzling inquisitiveness, pick up many scraps of useful information; but the powers of reason, of independent thought, of balanced judgment, lie latent in the young child to a very large degree. It is in the vital years from about twelve to sixteen or seventeen that these powers attain working strength, and it may therefore be considered that all which goes before the age of about twelve is merely preparatory, and that the real educational development properly dates from this time.

(*c*) *The Transfer to Secondary Schools.*—As the artisan classes are taking an increasing share in municipal and national government, the supreme Imperial task of our time is the raising of popular intelligence; and it is as desirable as it will be beneficial to give the artisan as broad an education as is given to those whose privilege it has hitherto mostly been. As yet, the greater number of our

working-class children must go out at the age of thirteen or fourteen to earn a livelihood, but it is to be hoped that in the very near future a much greater proportion of the children even of poor parents will be able to proceed to a secondary school, especially if they desire and deserve it. So the essential thing at the present moment is to popularize secondary-school teaching; to make the lower middle and artisan classes feel that they have as great an interest as anybody in our secondary schools. The narrow ladder must give place to a wide corridor between the primary and the secondary schools.

(*d*) *The Present Scholarship System Inadequate and Wrong in Principle.*—If this view of the aim of the primary school and of the relationship between the primary and the secondary school be granted, then it follows that our generally existing method of awarding scholarships is wrong in principle as well as inadequate. A Local Authority offers x scholarships, and primary-school teachers far too often look upon the winning of scholarships more as bringing *kudos* to the school than advantaging the child. They eagerly scan previous years' questions, and do their best to anticipate what questions may next be set; and, on the other hand, the examiner generally tries to set what he thinks the child will not know. Neither is to be blamed. Under present conditions they could hardly do otherwise. The system is at fault. Then the list is announced, and the child with 55·9 per cent. of marks may secure a scholarship, and the next one with 55·8 per cent. is "just out of it." Surely the fact only needs stating to show its absurdity.

The principle, too, is wrong, remembering the new conception of the scope and aim of primary education. Secondary-school teachers frequently lament the "falling-off" of scholarship children, despite the fact that a fair number of such have done well. If there must be a competitive examination, it would be preferable to give the candidates some new work to prepare in the examination room, and judge their capacity and intelligence by their power to get knowledge for themselves, rather than by their power to yield up what has often been so laboriously crammed into their heads.

(*e*) *Nomination and Consultation better than Examination.*—It would be well if all special preparation could be avoided. It should be possible at the end of the educational year to ask the teachers in primary schools what children desire and deserve to go forward to a secondary school, and, after nomination, the secondary-school teacher should meet the candidates face to face; then, by a few skilful questions and by consultation between the primary-school and secondary-school teachers, a wise selection could be made—a selection based, not upon the throw of a single examination (often too much of a lottery), but upon the child's school record and upon the secondary-school teacher's personal opinion of those latent powers which are at this time just beginning to make their presence evident.

(*f*) *Desirability of Varying number of Scholarships.*—There seems no reason why these scholarships should not vary according to the number of suitable applications. The list of children who may "desire and deserve" scholarships is not constant, but varies from year to year. There should be no poverty barrier. Maintenance allowances should be awarded where necessary, but no child ought to be transferred to a secondary school unless the parents are prepared to allow attendance for a full four years' course. For those who cannot do this the "tops" of the elementary schools should be strengthened in order to give an extended education for a year or two, of a type useful both for a livelihood and for life. That hybrid institution the so-called higher elementary school is a needless excrescence.

(*g*) *The Future of Bright Children from Poor Homes.*—As public money is spent to benefit the State as well as to help on the child, it would appear desirable that much more care should be taken to secure suitable employment for these children at the termination of the secondary-school course than is generally taken at present. It seems in one sense a waste of public money to give an efficient higher education to a promising lad, and then find him at fifteen or sixteen years of age starting work as an errand-boy, and even in some cases entering the ranks of unskilled labour. Not but that the errand boy is all the better citizen for his education; yet it is disheartening to many a bright lad to find the doors bolted against him in the walk of life he would select, because he lacks influence. He should find it possible to serve his town and his country in that station in life for which his capacity and intelligence fit him, remembering Plato's rule, "that children should be placed not according to their fathers' conditions, but according to the faculties of their mind."

(*h*) *Correlation of Aim and Co-ordination of Curricula.*—It is obvious that the more natural and easy the transition is made from the primary to the secondary school, the less will be the wastage of time and effort in settling down in the new school. To this end there should be periodical conferences on questions of curricula, and, so far as is practicable, a continuity in the scope and aim of the instruction, with the object of rendering easy the passage of intelligent pupils from the primary to the secondary school.

REVIEWS.

The Restoration.

The Cambridge Modern History, Vol. X.: The Restoration. (16s. net. Cambridge University Press.)

The period under review in the present volume is roughly the quarter of a century following the downfall of Napoleon. The various aspects are treated in twenty-four chapters of great ability and of occasional brilliance. The first seven years were characterized by a sapient attempt to govern not only European relations but even the affairs of individual States by common action concerted in European conclave. Mr. W. Alison Phillips opens the story with a clear and forcible narrative of the successive Congresses till, in 1823, "the open defection of Great Britain shook to its foundations the international structure on which, according to Metternich, the safety of Europe still rested." Lady Blennerhasset writes with much perspicacity on "The Doctrinaires," and in a later chapter on "The Papacy and the Catholic Church." This, we think, is the first appearance of a lady's hand in these learned pages. "Reaction and Revolution in France," and, later, "The Orleans Monarchy," are treated most capably by Prof. Emile Bourgeois, of the University of Paris; the various movements in Italy by Prof. Carlo Segré, of the University of Rome, and Greece and the Balkan Peninsula, and, later, the Egyptian rule of Méhemet Ali, by Mr. W. Alison Phillips. The affairs of Spain and Portugal occupy considerable space: the revolutionary movements in Spain are narrated by Prof. Rafael Altamira, of the University of Oviedo; the administration of the Spanish dominions in America, and the events that led to the establishment of independence in Spanish America, by Mr. F. A. Kirkpatrick; and the erratic career of Dom Pedro in Brazil, and his conflict with Dom Miguel in Portugal, by the Rev. George Edmundson. "Nothing could have exceeded the incapacity and errors committed from first to last by Dom Pedro and his adherents" in the operations against the Miguelists, "except those actually committed by their opponents"; and Dom Pedro was victorious only to die at thirty-four. The Germanic Federation is ably handled by Prof. A. F. Pollard; the affairs of Russia and of Poland, by Prof. S. Askenazy, of the University of Lemberg; and the Low Countries, by the Rev. George Edmundson. The important reforms agitated and carried through in Great Britain are described, from 1815 to 1832 by Mr. H. W. V. Temperley, and from 1832 to 1841 by Mr. G. P. Gooch, M.P.; while the story of Catholic Emancipation is told in a separate chapter by Mr. H. W. C. Davis, and the difficulties in Canada, eventually composed by Lord Durham, are briefly explained, also in a special chapter, by Mr. E. A. Benians. It is interesting to note the welcome co-operation of distinguished Continental scholars in presenting the history of their several countries during the period. Much attention is also given to literature and economics. In addition to the literary and social paragraphs appended to several of the historical chapters, there are four separate chapters devoted to (1) Literature in Germany, by Prof. J. G. Robertson, now of Dublin University; (2) The Revolution in English Poetry and Fiction, by Dr. W. J. Courthope, First Civil Service Commissioner; (3) Economic Changes, in the widest acceptation, by Prof. J. H. Clapham, of Leeds University; and (4) A Survey of the British Economists, from Adam Smith to Nassau Senior, by Prof. J. S. Nicholson, of Edinburgh University. The bibliography and the index are, as usual, most usefully comprehensive.

Modern Culture.

Die Allgemeinen Grundlagen der Kultur der Gegenwart. By seventeen contributors. (M. 18. Tenbner.)

This substantial volume is but "Teil I., Abteilung I.," of a most comprehensive work, "Die Kultur der Gegenwart, ihre Entwicklung und ihre Ziele," yet another monument of the enterprise of the famous publisher, produced under the general editorship of Prof. Paul Hinneberg. It is, of course, preliminary and general. Three of the other divisions of Teil I. have preceded it: Abteilung 4, on "Die Christliche Religion mit Einschluss der Israelitisch-Jüdischen Religion"; Abt. 7, on "Die Orientalischen Literaturen"; and Abt. 8, on "Die Griechische und Lateinische Literatur und Sprache." Other divisions of Teil I. and of Teil II. are announced. The mere headings indicate the immense scope of the work, and the names of the writers promise the most mature thought of the foremost men of Germany in the various departments—"die ersten

Gelehrten und Praktikern unserer Zeit." Naturally the work is dedicated to the Emperor, "dem erhabenen Schirmherrn deutscher Kulturarbeit." The scale, at all events, is imperial; and, if we judge from the present volume, so also is the plan and the execution.

The Germans have been greatly useful investigators and fetchers and carriers in all spheres of study, but now the leading spirits appear to yearn for co-ordination and generalization, so as to make clear the mutual bearings of results in different departments, and perhaps to determine the point of convergence of the whole. "'Wir sind es müde,' heisst es so in der Festschrift zum Zweihundertjahrsjubiläum der Königlich Preussiche Akademie der Wissenchaften. 'bloss Stoffe zu sammeln, wir wollen geistig des Materiales Herr werden; wir wollen hindurchdringen durch die Einzelheiten zu dem, was doch der Zweck der Wissenschaft ist: zu einer allgemeinen grossen Weltanschauung.'" Cyclopædias and encyclopædias and Conversations-Lexikons are not considered adequate, and the present enterprise is intended to fill the aching void in German literature. Prof. Hinneberg thinks it will be difficult to find in any country or in any age such a grand example of literary co-operation of men eminent in all the branches of science, theoretical and practical.

The present volume is disposed in four sections, the first two of which may be considered preliminary. The first is on "Das Wesen der Kultur," by Wilhelm Lexis; the second on "Das moderne Bildungswesen," by Friedrich Paulsen. The third section occupies the main part of the body of the volume: it treats of "Die wichtigsten Bildungsmittel." There are eight subdivisions: first, aud most important, "Schulen und Hochschulen," containing "Das Volksschulwesen," by Gottlob Schöppa; "Das Höhere Knabenschulwesen," by Adolf Matthias; "Das Höhere Mädchenschulwesen," by Hugo Gaudig; "Das Fach- und Fortbildungsschulwesen," by Georg Kerschensteiner;" "Die Geisteswissenschaftliche Hochschulausbildung," by Friedrich Paulsen; and "Die Naturwissenschaftliche Hochschulausbildung," by Walther von Dyck; then Museen, Austellungen, die Musik, das Theater, das Zeitungswesen, das Buch, and die Bibliotheken. The fourth and last section is on "Die Organisation der Wissenschaft," by Hermann Diels—one of the very ablest of the contributions. The treatment is comprehensive—definition, origin, historical development, principles and facts, actual working, and future prospects. Brief bibliographical notes are appended to the chapters. The handling proceeds—not altogether, indeed, but almost entirely—upon German bases: we should have expected a wider outlook, even if everything German were the cream of the cup. The work naturally treats the various subjects on broad lines, though here and there one finds considerable details. It is remarkably well written; it holds the attention; and it is full of instruction and suggestion. We shall follow the enterprising series with much interest.

The Theory of Real Functions.

Introduction to Infinitesimal Analysis. By Oswald Veblen and N. J. Lennes. (8s. 6d. net. New York: John Wiley & Sons. London: Chapman & Hall.)

Any one who has scanned the Subject Index of the British Museum Library, with a view to finding works in English specially devoted to the discussion of the general theory of "Functions of a Real Variable," will confess at once that there is ample room for a treatise covering the ground traversed by the writers of the present volume. Nevertheless, the manifest need for a work of the kind was even greater at the time when its production was first undertaken than it is now; for others besides the authors of the present text have also been at work during the interval. The exact place which the volume is intended to fill is (1) that of a text-book of reference, for the use of students taking a University course on the subject, and (2) that of a treatise forming a possible basis for a short theoretical course on *real* functions. Hence the work consists of text only, unaccompanied by exercises of any kind. Such tests of progress are, in the opinion of the writers, obtainable from other sources; but their absence from the treatise itself is to be regretted, in that the work is thus rendered less useful as a manual for the purposes of private study. Throughout their treatment of the subject-matter an important principle has been constantly borne in mind by the authors, namely, the desirability of obtaining rigorous proofs of the fundamental propositions without any unnecessary sacrifice of simplicity. With a view to putting the principle into successful practice, constant use has been made of Borel's theorem, often alluded to as the Heine-Borel theorem, because, in effect, Heine employed it in his demonstration of the theorem of uniform continuity. The proposition, as given by Borel, may be enunciated thus:

"If an interval $\overline{a\,b}$ is covered by any set $[\sigma]$ of segments, it is covered by a finite number of segments $\sigma_1, \ldots \sigma_n$ of $[\sigma]$."

A brief survey of the contents of the volume will be the surest means of giving to our readers an idea of its scope. The system of *real* numbers and its continuous character is the subject of the opening chapter, together with a discussion of the fundamental algebraical and arithmetical operations as applied to irrational numbers. Incidentally we have here a simply-worded set of axioms for the *real* number system due to Dr. E. V. Huntington, and well worth study. In this chapter the distinction between algebraic and transcendental numbers is defined, and the transcendental character of e and π demonstrated. It may well be noted that the definitions generally, as given in this work, are conspicuously clear and simple. The second chapter deals with "sets of points" and "segments," showing the correspondence between the system of *real* numbers and the *linear* continuum; the theory of the chapter is, therefore, generally identical with portions of the subject treated by W. H. and G. C. Young in their recent work on the "Theory of Sets of Points." The consideration of functions in general and of special classes of them is commenced in the third chapter, and in turn in this and subseqnent chapters the attention of the writers is occupied by the above and by the following subjects:—"theory of limits," "continuous functions," "infinitesimals and infinities," "derivatives and differentials," and "definite integrals." A final chapter, more advanced in character than the preceding portions of the work, is devoted to "improper definite integrals." The plan of placing at the close of a chapter such points in the discussion as may be left for consideration on a later reading of the text-book is uniformly adopted throughout the work. Numerous references are made to memoirs on the subject and to previously existing works, and in most cases every facility for verification accompanies the reference. The new volume on the Theory of Real Functions is certainly a valuable accession to the list of mathematical works in the English language.

Indian Sketches.

Life and Labour of the People of India. By Abdullah Yusuf-Ali, M.A., LL.M. Cantab., I.C.S., Barrister-at-Law. (12s. net. Murray.)

In view of the complacent and amazing ignorance of the conditions of the Indian people that prevails among their fellow-subjects in this country, notwithstanding our enormous responsibilities for the good government of the great dependency, this volume is very welcome. If it once be taken in hand, it will be read throughout; for Mr. Yusuf-Ali writes with remarkable fluency and simplicity, and presents a large amount of interesting information in vivid and attractive disposition. The substance of the chapters was delivered originally in the form of lectures at the Passmore Edwards Institute and elsewhere in London a year or two ago, when the author was in England on leave; and the interest then evoked has fortunately led to the present publication. Mr. Yusuf-Ali takes his hearers and readers through towns and villages, contemplates with them the life of the leisured classes, of the students, of the women, and of the people as citizens, and reviews the current industrial and economic conditions, the public health administration, and the social tendencies of the time. He selects his points and arranges his details with artistic skill; his touch is light and picturesque; he utilizes both Eastern and Western literature for embellishment with freedom and with scarcely a trace of Oriental extravagance or uncertainty; and altogether the work is delightful as well as instructive. There are very few statements that are open to exception. Yet the book must be read with suspense of judgment at many points. The author is a member of the Indian Civil Service, and his critical faculty is held in strict abeyance by official etiquette, which an Indian official must be the last man to transgress or to come within measurable distance of transgressing. Hence, whenever Mr. Yusuf-Ali touches some blot on the social, municipal, or other conditions, he carefully refrains from probing the question to the bottom. He shows his hand more fully on sanitation and traditional social backwardness generally, where he can let out

at the people themselves, and occasionally he handles more freely certain questions where Government itself has openly acknowledged the inadequate results of its endeavours. The volume, then, while excellent in many ways within its declared sphere of uncontentious description, requires large supplement before it can be accepted as a complete and true picture; and, for English readers, criticism is specially needed. Mr. Yusuf-Ali knows all this as well as any of us: the limitations of his work are deliberate. But he often indicates, to readers that understand the situation, that he is quite competent to furnish the adequate criticism that he expressly reserves. None the less, the book, as it stands, is defective in this essential respect. But, if readers will carefully make this reservation, they will obtain much valuable information from it and find it extremely enjoyable. There are nine full-page illustrations from drawings and photographs by Indian artists, and the cover bears an interesting design after an ornament preserved in the Royal Palace of Delhi. The volume is very agreeably printed and got up and ought to be very popular.

GENERAL NOTICES.

CLASSICS.

Life in Ancient Athens. By T. G. Tucker, Litt.D. Cantab., Hon. Litt.D. Dub., Professor of Classical Philology in the University of Melbourne. (5s. Macmillan. Handbooks of Archæology and Antiquities.)

Prof. Tucker describes "the social and public life of a classical Athenian from day to day." There are excellent compendia of Greek antiquities; there are many works of conspicuous merit dealing with Greek life, or with phases of Greek life, in general; but Prof. Tucker "treats solely of the one most interesting and important period of the one most interesting and important community," rescuing the main matters from the masses of detail, presenting them in distinct and vivid fashion, and not disdaining to "utilize any vivacities of method which are consistent with truth of fact." He sets forth the differences of the Greek races, and depicts the Athens of the classical period—its general features and environment, its public buildings and streets, its population of citizens, outlanders and slaves (with a special section on the position of women), the house and its furniture, the social day of a typical citizen, the life and fashions of a typical citizeness, the education and training of a boy and his subsequent career in the Army and the Navy, religion and morals, festivals and the theatre, the Council and the Assembly, a judicial trial, burial, and an outline of Athenian art. The description is lightened and rendered vivid by being to a considerable extent connected with the doings of Pasicles, and Pasiclea, and Pasiclea's little boy Lysimachus, who invest the facts with human interest and actuality. The student will read this book with avidity and profit: he will not have to store up a mass of lifeless details, but to follow a largely personal and dramatic narrative in which the essential facts cohere and hold the mind without laborious effort. A map of ancient Athens (adapted from the plan in Prof. A. E. Gardner's "Ancient Athens") stands as frontispiece, and there are 85 illustrations, judiciously selected and effectively reproduced.

(1) *Aids to Latin Translation.* (2) *Text of Passages analysed in "Aids to Latin Translation."* By Robert Weir, M.A., late Scholar of Trinity College, Cambridge. (1s. 9d. and 3d. Oliver & Boyd.)

The aim of the "Aids" is to help pupils to get at the literal meaning of a passage by systematic analysis of the structure of its sentences. Mr. Weir analyses and translates twenty-four exemplary extracts graduated in difficulty—six from each of four authors commonly read in schools (Caesar, Ovid, Livy, Virgil). Prefixed is a grammatical outline, with practical directions. The plan is scientific, and it is executed with methodical precision. It gives the pupil a definite idea of the right procedure—what to look for, and how to group the various parts. The pupil that works through the exercises as directed will have gained an analytical habit that will stand him in good stead in the future.

Matriculation Latin Construing Book. By A. F. Watt, M.A. Oxon., B.A. Lond., and B. J. Hayes, M.A. Lond. and Camb. (2s. Clive. University Tutorial Series.)

The authors give 204 extracts for exercise, mainly a reprint of most of the passages set for translation at sight at the London University Matriculation Examination, and therefore presumably quite representative. In an introductory section (pages 1–78) an attempt is made "to formulate the rules which should guide the learner both in ascertaining the construction and meaning of a Latin sentence, and in reproducing it in natural English," the elements of Latin grammar and a fair vocabulary of common words being assumed. The principal grammatical points are admirably selected, explained, and illustrated. A "lexicon" is appended. A thoroughly sound book, sure to prove eminently useful to all pupils in Latin.

MATHEMATICS.

A First Year's Course in Geometry and Physics. Parts I. and II. By Ernest Young, B.Sc. (1s. 6d. Bell.)

Part I. is intended to provide sufficient instruction for the first term in both subjects, whilst Part II. covers the geometry arranged for the remainder of the year's work. The course suggested is bright and practical in its bearing, and it is therefore calculated to stimulate the pupil's ardour. It is a pity that a defect noticeable in so many of the smaller modern text-books is not entirely absent from this one, namely, a want of sufficient precision in the language used. One instance alone will be quoted, and that constitutes an actual error: its equivalent appears in many a class-book. Here it runs as follows: "To find the volume of a cube, we multiply the length of a cube by itself three times." Obviously the writer intended to state that *three equal factors are to be multiplied together;* but that is not what is said. A very little careful criticism before publication would suffice to ensure far better results in this respect.

Elementary Arithmetical Graphs. By W. Mudie, F.E.I.S. (6d. Jack.)

Mr. Mudie has already contributed to the same series of mathematical publications a similar text-book dealing with the graphs of algebraical functions. In the present work the object of the discussion is the application of the subject to arithmetic. The earlier pages will make the elementary principles familiar to quite young pupils, and the mode of presentation is attractive. The later part of the little treatise cannot, we think, be appreciated until the student has otherwise gained a thorough knowledge of the first principles of proportion; moreover, some sections may prove too abstract for the average boy or girl. Most of the diagrams are good, but in various cases the lettering is far from satisfactorily arranged.

Trigonometry for Beginners. By Rev. J. B. Lock, M.A., and J. M. Child, B.A. (2s. 6d. Macmillan.)

On an essentially practical basis. The little text-book is the product of an attempt to carry out in connexion with trigonometry the same principles as have recently found expression in courses of elementary geometrical drawing as a valuable preliminary to the formal study of geometry. There is food for thought in the authors' suggestion that the untrained mind, unless it has a special bias, fails to be interested by a purely theoretical first study of trigonometry. The practical character of the applications of the science lend themselves to a treatment more likely to awaken interest and to create a desire for a closer knowledge of the complete subject.

ENGLISH READERS—SUPPLEMENTARY.

Cassell's "Continuous and Supplementary Readers" are reinforced by (1) *The Black Arrow:* a Tale of the Two Roses, by Robert Louis Stevenson; (2) *The Splendid Spur*, by "Q" (A. T. Quiller Couch); (3) "*Honour is my Guide,*" by Jeanie Hering (Mrs. Adams-Acton); and (4) *A Pair of Primroses*, by Sarah Pitt. The volumes make excellent reading, and each has four illustrations.

Harrap's "English Supplementary Readers," many of which we have noticed in other connexions, form an admirable and distinctive series (1s. 6d. each volume), "designed to include those epics and stories of the past which have survived the chances of time, reflecting as they do the genius of the nations which gave them birth." The "epics and stories" are sometimes "selected," but more often "retold." New additions to the series are: (1) *Britain Long Ago*, being stories from Old English and Celtic sources, and (2) *The Book of Rustem*, being stories retold from the Shah Nameh of Firdausi—both volumes by E. M. Wilmot-Buxton. The stories are attractive in themselves and they are attractively presented. Each volume contains 256 pages of letterpress and 16 full-page illustrations on art paper by well known artists, and is very agreeably got up.

"Macmillan's Supplementary Readers" include (1) *Alice's Adventures in Wonderland* (Lewis Carroll), with 42 illustrations by John Tenniel; (2) *Through the Looking Glass* (Lewis Carroll), with 50 illustrations by John Tenniel; (3) *Old Christmas* (Washington Irving—from "The Sketch Book"), with numerous illustrations by Randolph Caldecott; (4) *The Water-Babies* (Charles Kingsley), abridged, with 100 illustrations by Linley Sambourne; (5) and (6) *Cuckoo Clock* and *Carrots* (Mrs. Molesworth), each with 7 illustrations by Walter Crane. The volumes are handsomely printed (6d. each, paper covers). Each of the works has already achieved immense popularity.

"McDougall's Supplementary Readers" contain appropriate and excellent reading matter. In the Junior Series, we have No. 4, *The Snow Queen*, adapted from Hans Christian Andersen (2d.). Intermediate Series: No. 4, *The Pigmies* (Hawthorne), and No. 5, *The Minotaur* (Hawthorne) (2d. each). Both these series have a number of illustrations, rough but expressive. Advanced Series: No. 8, *Tales from Shakespeare* (Lamb), second selection; No. 9, *The Fortunes of Nigel* (Scott), abridged; No. 10, *Julius Caesar* (Shakespeare).

In the same group are *Stories for Little Readers* in four Books (3d. each), told "chiefly in words of one syllable," by Alice Gibbons, and prettily and liberally illustrated in colours. Charming and appropriate little books.

The "A. L." Bright Story Readers, edited by Alfonzo Gardiner and published by Messrs. E. J. Arnold & Son, Leeds, are all classical in matter, carefully graded, and simply, but skilfully and effectively, illustrated. All school children should read them, and they ought also to have a wide popular circulation. At the moment we have, in Grade II. (age 7–9): No. 24, *Story of a Cat* (told by herself), by Mlle. C. Wislez, and No. 25, *The Brave Little Tailor*, &c., three tales from Grimm (2½d. each). In Grade III. (age 8–10): No. 34, *Eyes and No Eyes*, &c. (from "Evenings at Home," by Dr. Aiken and Mrs. Barbauld); No. 35, *Ali Baba* (from "The Arabian Nights"); and No. 36, *Waste not, want not* (Maria Edgeworth) (3d. each). In Grade VI.: No. 66, *The Last Days of Pompeii* (Lytton)—the incident of Nydia, the blind girl (adapted); and No. 67, *More Lamb's Tales from Shakespeare*, a second selection (with extracts from the plays). In this grade notes and meanings are appended (4d. each).

Chambers's Complete Tales for Infants are not expressly said to be supplementary readers; but, anyhow, they are of that nature. We have (1) *Two Little School-Girls* and (2) *The Naughty Young Sparrow* (1d. each)—interesting stories divided into lessons and nicely illustrated.

NATURE STUDY AND NATURE READERS.

The "Look-about-you" Nature Study Books form a very engaging and instructive series (8d. each. Jack). Books III. and IV. are by Thomas W. Hoare, Teacher of Nature Study to the Falkirk School Board and the Stirlingshire County Council. Each of these "should be used as a simple guide to the practical study of Nature rather than as a mere reader," though of course they will do very well as readers, ordinary or supplementary. Mr. Hoare writes from personal experience, and unfolds his subjects admirably—common animals and plants. Book V., written by the late Rev. C. A. Johns, B.A., F.L.S., gives simple lessons on "Some British Forest Trees"—the most common and the most useful. Book VII., written by the late Rev. J. G. Wood, M.A., F.L.S., describes "Common Objects of the Country"—Part II. (caterpillars, moths, butterflies, beetles, flies): from which we infer that Book VI. (which, we suspect, we have mislaid) deals with a previous series of common country objects. The matter is ably and charmingly handled; the illustrations are abundant, many of them coloured; and the type and the limp binding are excellent. This series cannot but foster a keen interest in the natural objects, and it supplies skilled guidance towards the fruitful satisfaction of such interest.

Stories from Natural History, translated from the German of Richard Wagner (1s. 6d., Macmillan), are told in simple language and in an interesting way, so as to direct attention to the more characteristic facts. Animals are most prominent, but many common objects (cotton, silk, chalk, coal, earthenware, light, &c.) are also included. The collection is charming and instructive, and the illustrations are numerous and good.

I go a-walking through the Lanes and Meadows (2s. 6d. net, Foulis) has for its aim "to outline a walk in the country and to describe and picture the habits of the birds and the animals that are to be seen" on a mid-June evening. The lessons are for the most part taken from the Rev. C. A. Johns's admirable work "Wild Birds and their Haunts," partly also from Mr. F. H. Carruthers Gould's articles on field animals. There are seventy capital illustrations from the copyright collection of photographs by Mr. Charles Reid Whishaw. A delightful and instructive volume.

McDougall's Season Readers (36 pages, cloth limp, 3d. each) are charming little books "for use in higher infant classes and in the class corresponding to Standard I." The lessons are varied and appropriate, and there are plenty of attractive illustrations in colour as well as in black and white.

Animal Life, by M. T. Yates, LL.D. (1s. 6d., R.T.S.), contains a popular description of backboned animals, arranged in classes and families, with stories and anecdotes showing their characters and habits. It should be entertaining to children over ten years of age, as well as systematically informatory. It is nicely got up, and has 102 good illustrations from drawings and photographs from life. The volume makes an excellent supplementary reader.

Summer, by M. A. L. Lane and Margaret Lane (1s. 6d., Ginn), is Part IV. of "All the Year Round: a Nature Reader," completing the series. It contains 46 lessons, half of them on plants and trees, half on birds, insects, and animals, partly in prose, partly in verse, with numerous illustrations. The matter is interesting and simply expressed.

Butterflies and Bees: the Insect Folk, Vol. II., by Margaret Warner Morley (3s., Ginn), is written in simple, direct, and vivacious style, and is profusely illustrated and handsomely got up.

Earth and Sky, No. III., by J. H. Stickney (1s. 6d., Ginn), is intended "to call attention to the panorama of Nature in its salient features in such way as to make natural occasion for oral teaching." "The *forces* of the material universe are called to mind, beginning with the *life* force in plants and animals." The lessons are simple and effective, and a number of pertinent poetical pieces are appended. The volume is amply illustrated and substantially got up.

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(*Continued on page* 454.)

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I. (Sept. 26.) *Types of Troublesome Pupils:* Meaning of type: advantages of classification by types: dangers of such classifications: temperament and possibility of modifying it: correction of character: the ideal pupil as standard: deflections from the standard in two directions according as we consider intellect or conduct: manipulation of characters as actually found in school: specification of types and suggestions for their treatment.

II. (Oct. 3.) *The Individual and the Class:* Individual must be studied as individual: not always necessarily treated as individual: advantages of class teaching over individual instruction: maximum and minimum sizes of classes: relation between subject and size of class: teaching class through individual and *vice versa*: psychology of class as such: disintegration and redintegration of class: class leaders and their manipulation.

III. (Oct. 10.) *Parents and Home Lessons:* Spheres of the parent and the teacher in relation to school work: parent as teacher: parent as "preparation master": "causing another to learn": special characteristics of home work as compared with work done in school: principles on which kind and amount of home work have to be determined: the unit of home study: dangers of home study, with special reference to the nature of the home.

IV. (Oct. 17.) *Curricula and Organization:* Curricula as data: limits of variation of curricula at discretion of teacher: principles underlying the determination of curricula: relation of curricula to organization: organization by "sides": the Form System: Composite Forms: the place of the specialist teacher: various kinds of organization in which the pupils have a share in school government: principles on which the allocation of pupils to particular forms is determined.

V. (Oct. 24.) *Time Tables:* Esoteric and exoteric time tables: degree of detail: practical considerations in the drawing up of time tables: the unit of time in relation to the day, week, and term: fixed and variable quantities: application of law of diminishing returns: danger signal of fatigue: *ennui* and weariness: the influence of the meal hour: mental "second wind": danger of pathological brightness of intellect.

VI. (Oct. 31.) *Examinations and Corrections:* Educational and administrative purposes of examinations: evils of external examinations and means to minimize those evils: advantages of class examinations: how to draw up an examination paper: hints for pupils on how to work an examination paper: how to mark examination papers: various methods of marking ordinary written work in school: practical suggestions to save waste of time and ensure efficiency.

VII. (Nov. 7.) *Lecturing in School:* Distinction between lecturing and teaching: why lecturing is discredited in schools: recent tendency to return to lecturing in History, Science, and even Geometry: work demanded of the pupil who is taught on the lecture system: art of listening: preparation of lecture materials by teacher and by pupil: length of lectures in relation to stage of pupils: combination of teaching and lecturing.

VIII. (Nov. 14.) *Note-taking and Text-books:* Note-taking a correlative of lecturing: difficulties and dangers of note-taking: its place at different stages in the school course: how far it can be taught: relation to different school subjects: note-book as text-book: relation beteen teacher's work and the text-book: relation of text-book to pupil's private study: classification of text-books: tests of a good text-book.

IX. (Nov. 21.) *Apparatus:* Distinction from furniture: aids in actual teaching: danger of being dominated by apparatus: over-elaborate apparatus: ready-made and home-made apparatus: permanent and temporary: hints for preparing apparatus: various kinds of school maps: the optical lantern: various kinds of blackboards: use of the blackboard for writing and for drawing: uneducational and excessive use of the blackboard.

X. (Nov. 28.) *Special Methods:* The place in practical school work of the various special methods, such as the Socratic, the Heuristic, the Concentric: the principle of correlation of studies: dangers of rigid application of any one of the special methods: illustrations of the application of these methods to the ordinary school subjects such as Arithmetic, Grammar, Elementary Science: the next two lectures will supply further illustrations.

XI. (Dec. 5.) *Connection between Language and Literature:* The three vocabularies and their relation to language and literature respectively: possibility of *teaching* literature at all at the various stages of school life: relation of conversation and composition to literature proper both in English and in foreign languages: suggestions of exercises in English Composition suitable to prepare for the study of English Literature.

XII. (Dec. 12.) *Connection between Geography and History:* Geography a science: possibility of a science of History: neither can be taught quite independently of the other, though Geography is the more independent: Geography is the space setting of History: limitations of the correlation between the two subjects: applications of the Concentric and Heuristic methods: suggestions for practical problems that will bring out the true relations between Geography and History.

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16187. (V. RAMASWAMI AIYAR, M.A.)—A. and B. play at a game, in which each game is won by A. or B. by an equal chance, for a fixed stake on each game. B. has enough money; while A., having none, poses as if he has enough, too. Show that the probability that A. would be able to maintain his pretension for $2n-1$ games or $2n$ games is

$$\frac{1}{2}\cdot\frac{3}{4}\cdot\frac{5}{6}\cdots\frac{2n-1}{2n}.$$

Solution by S. NARAYANA AIYAR.

[*Lemma.*—$C_{m,n}$ being the number of games in which m gains and n losses can occur, and $J_{m,n}$ denoting the number of orders which fulfil the condition that the losses must never be in excess of the gains

$$J_{m,n} = C_{m,n} - C_{m+1,n-1}.$$

Whitworth's *Choice and Chance*, Fifth Edition, page 115.]

If the wager be a single coin, at the end of every odd game A. must have coins, and therefore he will be able to continue his pretension for the next game, or $A_{2n-1} = A_{2n}$ where A_{2n} denotes the probability that A. continues his pretension to $2n$ games.

At the end of every even game A. should have either no coin or an even number of coins. Let ${}_{2n}F_{2r}$ denote the number of favourable games out of $2n$ games to have $2r$ coins. Then, by the Lemma, by changing m into $n+r$ and n into $n-r$,

$$J_{n+r,\,n-r}, \quad i.e., \quad {}_{2n}F_{2r} = {}^{2n}C_{n-r} - {}^{2n}C_{n-r-1}.$$

By giving to r in succession the values 1, 2, 3, ..., n, and remembering that ${}_{2n}F_{2n}$ is 1, the number of favourable games for A. to have coins is ${}^{2n}C_{n-1}$. The number of favourable games for A. to have no coin is ${}_{2n}F_0 = {}^{2n}C_n - {}^{2n}C_{n-1}$, and from these results we get games where A. has coins : games where A. has no coin $= n : 1$.

When A. has coins the chance of his continuing the next game is 1, while when A. has no coin his chance is only $\frac{1}{2}$. But the number of games in which he has coins is n times the number of games in which he has no coins. Therefore his total chance of continuing his next game is $(n+\frac{1}{2})/(n+1)$, *i.e.*, $(2n+1)/(2n+2)$. Therefore

$$A_{2n+1} = (2n+1)/(2n+2)\, A_{2n}.$$

But we have already proved that $A_{2n-1} = A_{2n}$, and, remembering that A_2 is $\frac{1}{2}$, we get

$$A_{2n-1} = A_{2n} = (1.3.5.7 \ldots 2n-1)/(2.4.6.8 \ldots 2n).$$

15994. (Hon. G. R. DICK, M.A.)—Quadrics are drawn through seven given points, four of which are taken as the vertices of the tetrahedron of reference. If $(x_1, y_1, z_1, w_1), \ldots, (x_3, y_3, z_3, w_3)$ are the co-ordinates (quadriplanar or tetrahedral) of the other three given points, and the notation $|a_1 b_2 c_3|$ is employed to denote the determinant $\begin{vmatrix} a_1 & b_1 & c_1 \\ a_2 & b_2 & c_2 \\ a_3 & b_3 & c_3 \end{vmatrix}$, then the co-ordinates of the eighth point through which all the quadrics of the system pass are given by

$$x\,\frac{|z_1w_1,\ y_2w_2,\ y_3z_3|}{|y_1,\ z_2,\ w_3|} = \text{similar quantities.}$$

Note by Professor NANSON.

The remark of the Proposer, *Reprint*, Vol. XI., p. 80, calls for a reply. For simplicity, I assume that no four of the given points are in a plane. By a well known theorem in determinants (Sylvester's homoloidal law) the fifteen determinants formable from a 6 . 4 array (using all the rows every time) all necessarily vanish if three properly chosen ones vanish. In the Solution, pp. 79, 80, the three planes are properly chosen in the sense above implied, provided the determinants

$$\begin{Vmatrix} x_2x_3 & y_2y_3 & z_2z_3 & w_2w_3 \\ x_3x_1 & y_3y_1 & z_3z_1 & w_3w_1 \\ x_1x_2 & y_1y_2 & z_1z_2 & w_1w_2 \end{Vmatrix} \quad \ldots\ldots\ldots\ldots\ldots\ldots\ldots \text{(A)}$$

are not all zero. In this event the three planes have a determinate point of intersection and that point of intersection necessarily, by Sylvester's theorem, lies on each of the quadrics and cubics mentioned in the Solution. If, on the other hand, the determinants (A) do all vanish, then the equations given by the Proposer in the Question take the nugatory form $x\,.\,0 = y\,.\,0 = z\,.\,0 = w\,.\,0$.

11215. (Professor LEMOINE.)—Sur les perpendiculaires MA′, MB′, MC′ abaissées d'un point M sur les côtés du triangle ABC on prend respectivement les points A″, B″, C″ tels que

$$MA'.MA'' = MB'.MB'' = MC'.MC'' = \rho^2.$$

Quel que soit ρ, le triangle A″B″C″ est perspectif avec ABC et le centre de perspective est sur l'hyperbole équilatère ABCM.

Solutions (I.) *by* Professor A. DROZ-FARNY; (II.) *by* Professor SANJÂNA, M.A.

(I.) Décrivons de M comme centre, avec la quantité ρ comme rayon, une circonférence variable; comme $MA'.MA'' = \rho^2$, le point A″ est le pôle de la droite BC; il en est de même pour B″ et C″. Or (Casey, *A Sequel to Euclid*, Fourth Edition, p. 142): "If two triangles be such that the sides of one are the polars of the vertices of the other, they are in perspective."

Les points A″, B″, C″ décrivent sur les supports MA′, MB′, MC′ des ponctuelles perspectives ayant le point M en commun correspondant à $\rho = 0$. Le point infini de chaque série est de même point homologue correspondant à $\rho = \infty$.

Les trois faisceaux AA″, BB″, CC″ de centres A, B, C sont donc en homographie, et le point d'intersection de trois rayons homologues décrit une conique passant par A, B, C, par le point M commun aux trois ponctuelles, et par l'orthocentre du triangle pour la valeur $\rho = \infty$, car dans ce cas AA″ devient parallèle à MA″, donc hauteur du triangle.

Le lieu cherché est donc bien l'hyperbole équilatère ABCM.

(II.) Let A″A, B″B, C″C cut BC, CA, AB in X, Y, Z respectively; let f, g, h be the co-ordinates of M. Then

$$\frac{\sin BAX}{\sin CAX} = \frac{h + \rho^2 \cos B/f}{g + \rho^2 \cos C/f} = \frac{hf + \rho^2 \cos B}{fg + \rho^2 \cos C};$$

so $$\frac{\sin CBY}{\sin ABY} = \frac{fg + \rho^2 \cos C}{gh + \rho^2 \cos A} \quad \text{and} \quad \frac{\sin ACZ}{\sin BCZ} = \frac{gh + \rho^2 \cos A}{hf + \rho^2 \cos B};$$

hence, as $$\frac{\sin BAX \sin CBY \sin ACZ}{\sin CAX \sin ABY \sin BCZ} = 1,$$

the three lines are concurrent, so that A″B″C″ is in perspective with ABC. Let x, y, z be the co-ordinates of the centre of perspective; then $x(gh + \rho^2 \cos A) = y(hf + \rho^2 \cos B) = z(fg + \rho^2 \cos C)$. Eliminating ρ^2, we get at once

$$xy(hf \cos A - gh \cos B) + yz(fg \cos B - hf \cos C) + zx(gh \cos C - fg \cos A) = 0,$$

which is the rectangular hyperbola through ABCM.

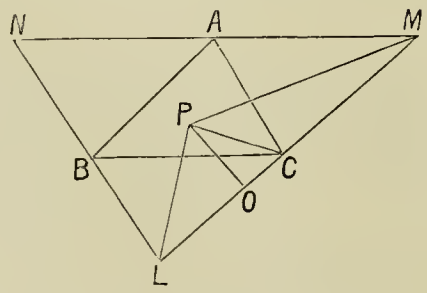
9000. (R. KNOWLES, B.A.)—In any triangle prove that

$$a \cos(B - C) + b \cos(A - C) + c \cos(A - B) = 4/R.$$

[On right-hand side *read* $4\Delta/R$.—ED.]

Solutions (I.) *by* HENRY RIDDELL, M.E.; (II.) *by* R. J. WHITAKER, B.A., Rev. J. C. BOWMAN, *and many others.*

(I.) Draw through the three vertices parallels to opposite sides, thus forming the triangle LMN whose area $= 4\Delta$. Join P, the centre of circum-circle of ABC, to L, C, and M, and draw PO perpendicular to LM. Then is



$$\angle PCB = 90° - A,$$

and $$\angle BCL = \angle B.$$

Hence we see that

$$\angle PCO = 90° + (B - A), \quad \text{and} \quad PC = R.$$

$$\sin[90° + (B - A)] = \cos(A - B) \quad \text{and} \quad PO = R \cos(A - B).$$

But $LC = c$. We have then $Rc \cos(A - B)$ = area LMP, and similarly for the other sides. Hence

$$R[c \cos(A - B) + a \cos(B - C) + b \cos(C - A)] = \text{area LMN} = 4\Delta,$$

and the equality is proved.

(II.) $$\begin{aligned} & a \cos(B - C) + b \cos(A - C) + c \cos(A - B) \\ &= 2R[\sin(B + C)\cos(B - C) + \sin(A + C)\cos(A - C) \\ &\qquad + \sin(A + B)\cos(A - B)] \\ &= 2R\Sigma \sin 2A = 8R \sin A \sin B \sin C \\ &= 2ab \sin C/R = 4\Delta/R. \end{aligned}$$

16252. (JAMES BLAIKIE, M.A.)—If a, b, c are the sides of a triangle ABC; p, q, r the distances of a point D from A, B, C, prove that A, B, C, D are coplanar when the following relation holds good:—

$$\Sigma[(a^2p^2 + b^2c^2)(q^2 + r^2)] = \Sigma[a^2p^2(a^2 + p^2)] + \Sigma a^2q^2r^2 + a^2b^2c^2.$$

Show, both geometrically and algebraically, that this condition is identical with

$$\Sigma[(a^2p^2 + q^2r^2)(b^2 + c^2)] = \Sigma[a^2p^2(a^2 + p^2)] + \Sigma a^2q^2r^2 + a^2b^2c^2.$$

Solution by the PROPOSER.

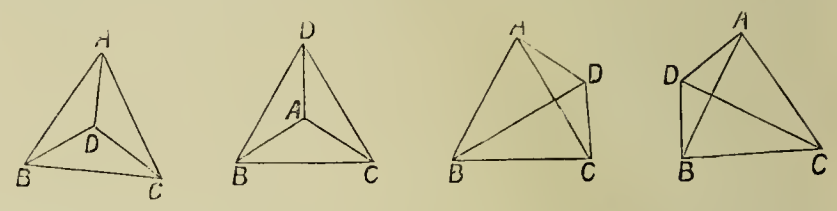
If D is coplanar with A, B, C, either $\angle BDC + \angle CDA + \angle ADB = 2\pi$, or one of these three angles is equal to the sum of the other two. These four conditions are equivalent to the relation

$$\cos BDC = \cos(CDA \pm ADB) = \cos CDA \cos ADB \pm \sin CDA \sin ADB$$

or $$(\cos BDC - \cos CDA \cos ADB)^2 = (1 - \cos^2 CDA)(1 - \cos^2 ADB),$$

which reduces to

$$\cos^2 BDC + \cos^2 CDA + \cos^2 ADB = 1 + 2 \cos BDC \cos CDA \cos ADB.$$



Substituting the values of the cosines in terms of the sides, and clearing of fractions, we get

$$(q^2 + r^2 - a^2)(r^2 + p^2 - b^2)(p^2 + q^2 - c^2) + 4p^2q^2r^2 = p^2(q^2 + r^2 - a^2)^2 + q^2(r^2 + p^2 - b^2)^2 + r^2(p^2 + q^2 - c^2)^2,$$

which reduces to either of the conditions given above.

It is clear geometrically that the given condition is equivalent to

$$\cos BAC = \cos(BAD \pm DAC),$$

and if we form the cosines we have a result similar to the above except that b is interchanged with q, and c with r. The algebraical expressions are proved equal by multiplying out.

13249. (W. J. GREENSTREET, M.A.)—OQ is the perpendicular from the origin O to the tangent to a curve at P. If C is the centre of curvature at P, and D the foot of the perpendicular from C to OP, E, M the feet of the perpendiculars from D, O to CP, then shall QM and OE intersect in the centre of curvature at Q.

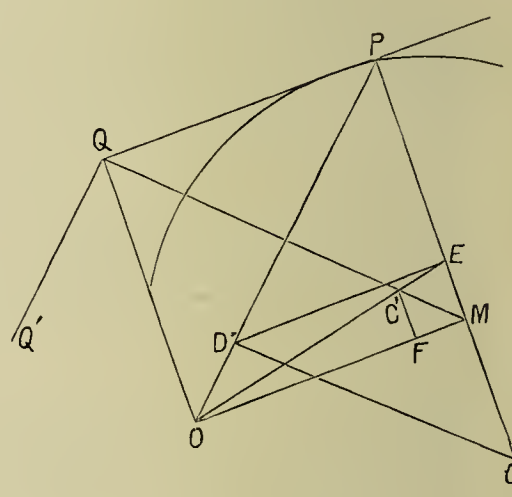
Solution by MAHENDRA NATH, D.E., M.A., B.Sc.

If OP, OQ $= r$, p respectively, then OQ′ the perpendicular from O on the tangent at Q $= p^2/r$; therefore $\sin OQQ' = OQ'/OQ = (p^2/r)/p = p/r = \sin OPQ$. Hence since

$$\angle OQM = \angle OPM;$$

therefore QM is the direction of the normal at Q. Now the radius of curvature at Q

$$\begin{aligned} &= r^2/(2r - p\,dr/dp) \\ &= r^2/(2r - p/r.r\,dr/dp) \\ &= OP^2/(2OP - DP) \\ &= OP^2/(OP + OD). \end{aligned}$$



But $QC'/QM = OF/OM = C'F/EM$ (if C′F be parallel to QO) $= QO/(QO + EM) = OP/(OP + OD)$; therefore $QC' = QM.OP/(OP + OD) = OP^2/(OP + OD)$ = the radius of curvature at Q; therefore C′ is the centre of curvature for Q.

16090. (H. BATEMAN, B.A.)—A_1, A_2, A_3, A_4 are any four points in a plane. Out of these any point such as A_4 is chosen, and lines are drawn through A_1, A_2, A_3 perpendicular to A_4A_1, A_4A_2, and A_4A_3 respectively, so as to form a new triangle $B_1B_2B_3$. Prove that the ratio of the areas of the triangles $A_1A_2A_3$, $B_1B_2B_3$ is the same whichever point A_4 is chosen.

Geometrical Solutions, (I.) *by* C. HILLYER, M.A.; (II.) *by* Rev. S. SIRCOM; *Trigonometrical Solution by* Professor SANJÂNA, M.A.; *Solution by Analytical Geometry and Determinants, by* S. T. SHOVELTON, M.A., *and* R. F. WHITEHEAD, B.A.

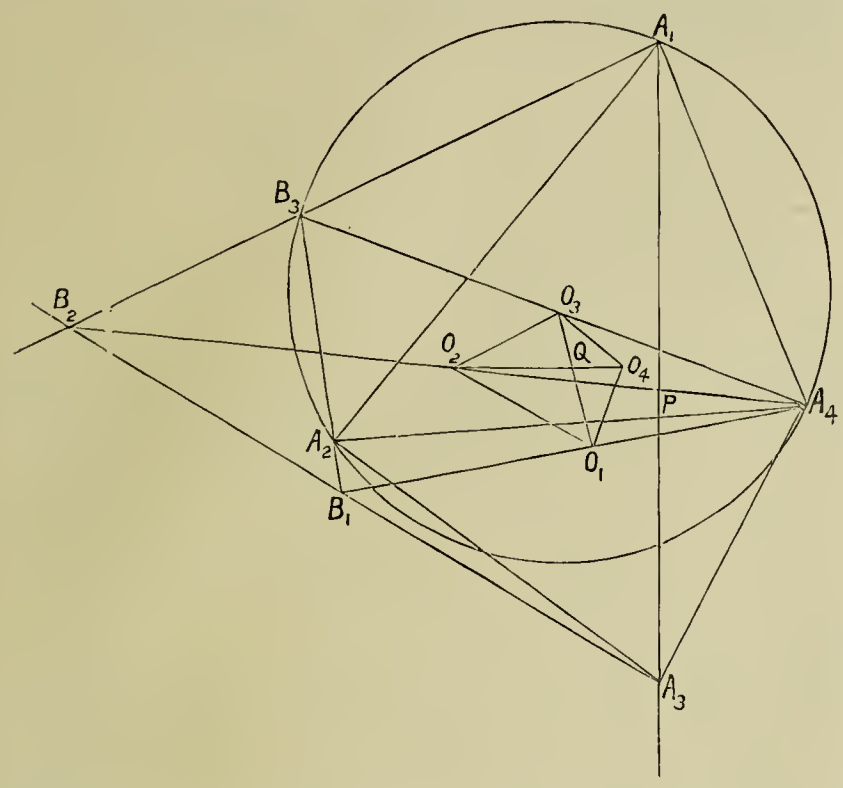
(I.) Let O_1 be the circum-centre of the triangle $A_2A_3A_4$, O_2 of $A_3A_4A_1$, ...; then O_1O_2 is the perpendicular bisector of A_3A_4, O_2O_3 of A_4A_1, ... Let O_1O_3 and O_2O_4 meet in Q, and A_1A_3, A_2A_4 in P; then, by similar triangles, $O_2Q : QO_3 = A_1P : PA_4$ and $QO_3 : O_4Q = PA_2 : A_1P$; therefore $O_2Q : QO_4 = A_2P : PA_4$; therefore

$$\triangle O_1O_2O_3 : \triangle O_3O_4O_1 = \triangle A_1A_2A_3 : \triangle A_3A_4A_1.$$

Thus the O triangles are proportional to the corresponding A triangles; but O_1 is the mid-point of A_4B_1, O_2 of A_4B_2, and O_3 of A_4B_3; therefore $\triangle B_1B_2B_3$ is four times the triangle $O_1O_2O_3$: and so on; therefore the B triangles are also proportional to the corresponding A triangles.

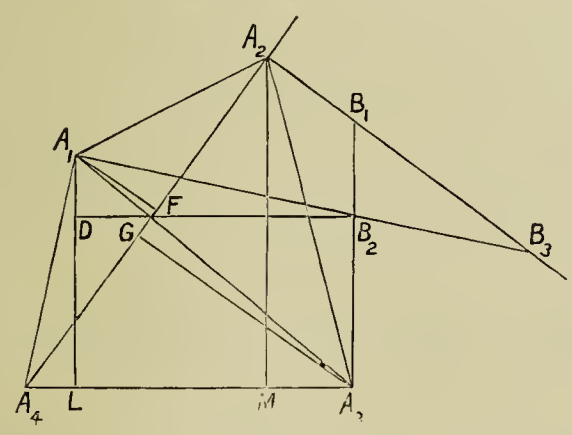
[Also, by analysis, if $A_1A_2A_3$ is taken as triangle of reference and α', β', γ' the trilinear co-ordinates of the point A_4, the proof is not difficult (though rather long) that the ratio of any one of the B triangles

to the corresponding A triangle is equal to the symmetrical expression



$(2R^3/\Delta^2)\,[(\beta'\gamma'\sin A_1+\gamma'\alpha'\sin A_2+\alpha'\beta'\sin A_3)^2/\alpha'\beta'\gamma']$ where Δ is the area and R the circum-radius of the triangle of reference.

(II.) $$\frac{A_1D}{LA_3}=\frac{A_4L}{A_1L};\qquad \frac{A_1L-A_3B_2}{A_4A_3-A_4L}=\frac{A_4L}{A_1L};$$
$$A_1L^2+A_4L^2=A_1A_4^2=A_1L.A_3B_2+A_4L.A_4A_3;$$
$$A_2A_4^2=A_2M.A_3B_1+A_4M.A_4A_3;$$



$$B_1B_2=\frac{A_1L.A_2A_4^2-A_2M.A_1A_4^2-A_4M.A_4A_3.A_1L+A_4A_3.A_4L.A_2M}{A_1L.A_2M};$$
$$A_3A_4.B_1B_2=\frac{A_3A_4.A_1L.A_2A_4^2-A_3A_4.A_2M.A_1A_4^2-A_3A_4^2(A_4M.A_1L-A_4L.A_2M)}{A_1L.A_2M};$$
$$A_4B_1B_2=\frac{A_4A_1A_3.A_2A_4^2-A_4A_2A_3.A_1A_4^2-A_4A_1A_2.A_3A_4^2}{A_1L.A_2M}$$
$$=A_4A_1A_2.A_3A_4^2\,\frac{A_4A_1A_3.A_2A_4^2-A_4A_2A_3.A_1A_4^2-A_4A_1A_2.A_3A_4^2}{4A_4A_1A_2.A_4A_2A_3.A_4A_1A_3};$$
$$A_4B_2B_3=A_4A_2A_3.A_1A_4^2\,\frac{A_4A_1A_3.A_2A_4^2-A_4A_2A_3.A_1A_4^2-A_4A_1A_2.A_3A_4^2}{4A_4A_1A_2.A_4A_2A_3.A_4A_1A_3},$$
$$\ldots\ \ldots\ \ldots\ \ldots\ \ldots\ \ldots\ \ldots\ \ldots\ \ldots\ \ldots\ \ldots\ \ldots\ \ldots,$$

whence $$B_1B_2B_3=A_4B_1B_3-A_4B_1B_2-A_4B_2B_3$$
and $$\frac{B_1B_2B_3}{A_1A_2A_3}=\frac{(A_4A_2A_3.A_1A_4^2+A_4A_1A_2.A_3A_4^2-A_4A_1A_3.A_2A_4^2)^2}{4A_4A_1A_2.A_4A_2A_3.A_4A_1A_3.A_1A_2A_3}.$$

The denominator is symmetrical. In the numerator,
$$A_1A_4^2=A_1A_2^2+A_2A_4^2-2A_2A_4.A_2F;\quad A_3A_4^2=A_2A_3^2+A_2A_4^2-2A_2A_4.A_2G;$$
$$A_4A_1A_3=A_1A_2A_4+A_4A_2A_3-A_1A_2A_3;$$
$$2A_4A_2A_3.A_2F=A_2A_4.A_3G.A_2F;\quad 2A_4A_2A_1.A_2G=A_2A_4.A_1F.A_2G;$$
and $$A_3G.A_2F+A_1F.A_2G=A_1A_2A_3;$$
whence the numerator becomes
$$(A_4A_1A_2.A_2A_3^2+A_4A_2A_3.A_1A_2^2-A_2A_4^2.A_1A_2A_3)^2;$$
which is what we should have obtained starting from A_2.

[Rest in *Reprint*.

7507. (R. Knowles, B.A., L.C.P.)—Prove that
$$\int_0^{\frac{1}{2}\pi}\frac{2\cos^2\alpha-\sin^2 2\alpha\cos^2 x}{1-\sin^2 2\alpha\cos^2 x}\log(\cos x)\,dx=\pi\log(\tfrac{1}{2}\sec\alpha).$$

Solution by $\theta.\beta$.

The following is an alternative method of solving:—

Obviously $\dfrac{2\cos^2\alpha-\sin^2 2\alpha\cos^2 x}{1-\sin^2 2\alpha\cos^2 x}=\dfrac{2(1-t^2\cos 2x)}{1+t^4-2t^2\cos 2x}$, where $t=\tan\alpha$.

If $|t|<1$, we can expand in powers of t and get
$$2(1+t^2\cos 2x+t^4\cos 4x+t^6\cos 6x+\ldots);$$
while, if $|t|>1$, we find $2(\cos 2x/t^2+\cos 4x/t^4+\cos 6x/t^6+\ldots)$.

Now
$$\int_0^{\frac{1}{2}\pi}\log(4\cos^2 x)\,dx=0-\pi\log 2,\quad \int_0^{\frac{1}{2}\pi}\log(4\cos^2 x)\cos 2nx\,dx=(-1)^{n-1}\pi/2n,$$
and both of the above series converge uniformly with respect to x; so that we may integrate, and then we find
$$\int_0^{\frac{1}{2}\pi}\frac{2\cos^2\alpha-\sin^2 2\alpha\cos^2 x}{1-\sin^2 2\alpha\cos^2 x}\log(\cos^2 x)\,dx=-2\pi\log 2+\pi(t^2-\tfrac{1}{2}t^4+\ldots)$$
or $$\pi[1/t^2-\tfrac{1}{2}(1/t^4)+\tfrac{1}{3}(1/t^6)-\ldots].$$
These reduce respectively to $\pi\log\frac{1}{4}(1+t^2)=\pi\log(\frac{1}{4}\sec^2\alpha)$ if $\tan^2\alpha<1$
and $\pi\log(1+1/t^2)=\pi\log(\operatorname{cosec}^2\alpha)$ if $\tan^2\alpha>1$.

16262. (W. P. Workman.)—If the fraction $\frac{1}{7}$ be converted into a radix fraction in scales 2, 3, 4, 5, 6, ..., the numbers of figures in the period are respectively 3, 6, 3, 6, 2, 1, 1, 3, 6, 3, 6, 2, 1, 1, ..., the numbers forming a repeating group of 7 terms. Prove this and show that the same law holds for a fraction 1/N, whether N be prime or not, if, in the latter case, the number of figures completely expressing the radix fraction be taken.

Solution by Lt.-Col. Allan Cunningham, R.E.

Let n = number of figures in period of 1/N when expressed as a radix fraction in scale of r. And let ξ = Haupt-exponent of r (mod N), *i.e.*, the least exponent giving $r^\xi\equiv+1$ (mod N). Then it is known that $n=\xi$.

Now, taking all the scales $r=2, 3, 4, \ldots, (N-1)$, it is clear that certain definite values of $n=\xi$ will occur in that range $r=2$ to $(N-1)$, and that from $r=(N+2)$ to $(2N-1)$ these values recur, since
$$(r+N)^\xi\equiv r^\xi=+1\ (\text{mod N}),$$
and then recur again; so that there is a period of N terms.

When N = 7, the radix fractions and periods are as follows:—

$r=2$	3	4	5	6	7	8
$N=\cdot\dot{0}0\dot{1}$	$\cdot\dot{0}1021\dot{2}$	$\cdot\dot{0}2\dot{1}$	$\cdot\dot{0}3241\dot{2}$	$\cdot\dot{0}\dot{5}$	$\cdot 1$	$\cdot\dot{1}$
$n=\xi=3$	6	3	6	2	0	1

$r=9$	10	11	12	13	14
$N=\dot{1}2\dot{5}$	$\cdot\dot{1}4285\dot{7}$	$\cdot\dot{1}6\dot{2}$	$\cdot\dot{1}86t3\dot{5}$	$\cdot\dot{1}_e$	$\cdot 2$
$n=\xi=3$	6	3	6	2	0

It will be seen that the values of $n=\xi$ here given for the cases of $r=7, 14$ are $n=0, 0$ (the Proposer's figures being here 1, 1); because there is no recurrence when $r=7, 14$.

16241. (Saradakanta Ganguli, M.A.) — If the Pythagorean definition of numbers in musical progression be extended to any numbers, positive or negative, integral or fractional, rational or irrational, find a series of numbers such that, if any four consecutive numbers of the series be taken, they will be in musical progression. Show that there are only two such principal series, and that all other series in musical progression are deducible from them.

Solution by R. J. Whitaker, B.A., *and the* Proposer.

Let $a_1, a_2, a_3, a_4, a_5, a_6, \ldots$ be a series formed so that a_1, a_2, a_3, a_4 are in musical progression, and of the succeeding terms,
$$a_5=a_3a_4/a_2,\quad a_6=a_5a_4/a_3,\quad \ldots.$$
Then $$a_2=2a_1a_4/(a_1+a_4),\quad a_3=\tfrac{1}{2}(a_1+a_4),$$
so that $$a_1/a_2=a_3/a_4\quad\text{and}\quad a_5=(a_1+a_4)^2/4a_1.$$
If a_2, a_3, a_4, a_5 are in musical progression, then must
$$a_5+a_2=2a_4\quad\text{and}\quad a_3=2a_2a_5/(a_2+a_5).$$
The second of these conditions is equivalent to the first, since $a_5=a_4a_3/a_2$; therefore we must have
$$(a_1+a_4)^2/4a_1+2a_1a_4/(a_1+a_4)=2a_4\quad\text{or}\quad (a_1+a_4)^3=8a_1a_4^2,$$
i.e., $$a_4^3-5a_4^2a_1+3a_4a_1^2+a_1^3=0,$$
whence $a_4/a_1=1$ or $2\pm\sqrt{5}$. If one of these conditions is satisfied, then $$a_3+a_6=a_3+a_4a_5/a_3=(a_3^2+a_4a_5)/a_3.$$
But $a_1a_4=a_2a_3$ and $a_2a_5=a_3a_4$; therefore $a_3^2=a_1a_5$, so that
$$a_3+a_6=(a_1a_5+a_4a_5)/a_3=2a_5,$$
since $a_1+a_4=2a_3$; therefore a_3, a_4, a_5, a_6 are in musical progression,

and so on for every succeeding term. Taking $a_4/a_1 = 2 \pm \sqrt{5}$, and $a_1 = 2$, the series becomes

$$2,\ 1 \pm \sqrt{5},\ 3 \pm \sqrt{5},\ 4 \pm 2\sqrt{5},\ 7 \pm 3\sqrt{5},\ 11 \pm 5\sqrt{5},\ \ldots,$$

a recurring series of which the scale of relation is $1 - x - x^2$, and every series satisfying the conditions must have its terms proportional to one of these.

Note.—The series $a_1, a_3, a_5, \ldots$ and $a_2, a_4, a_6, \ldots$ are each geometrical progressions, with the same common ratio, namely $\frac{1}{2}(3 \pm \sqrt{5})$.

16158. (V. Ramaswami Aiyar, M.A.)—ABC is a triangle inscribed in a conic (focus S). If the base BC passes through the reflection of A with respect to the S directrix, then the pedal circle of the triangle ABC with respect to S has its diameter equal to SA.

Additional Solution by M. T. Naraniengar, M.A.

Let BC meet the S directrix at O, then, since BC passes through the reflection of A, OA and OBC are equally inclined to the directrix. Hence, if the circle ABC cuts the conic in the fourth point D, OAD is a straight line. Now, from the harmonic property of the conic, we know the focal line perpendicular to OS is the polar of O with respect to the circle ABCD, and O and S are inverse points with respect to the circle ABCD. Thus, if X be the centre of the circle ABCD, SXBC are concyclic, and therefore, since the pedal circle of X with respect to ABC has its diameter equal to XA, the pedal circle of S has also its diameter equal to SA.

Note.—The condition that the pedal circle of S with respect to a triangle ABC should have its diameter equal to SA is at once seen to be that $\angle$BSC equals twice the angle. A. Hence $\angle BSC = \angle BXC$, and therefore B, S, X, C are concyclic.

QUESTIONS FOR SOLUTION.

16292. (*Communicated by* H. MacColl, B.A.)—"*Whatever P and Q may stand for, we may show, à priori, that some P is Q.* For *All PQ is Q* by the law of identity, and similarly *All PQ is P*; therefore, by a syllogism in *Darapti*, *Some P is Q.*"—How would you deal with this paradox? [From Dr. Keynes's *Formal Logic.*]

16293. (F. B. Pidduck, B.A.)—If P_n is the n-th Legendre coefficient of argument $\cos\theta$, and S_n denotes $P_0 + P_1 + \ldots + P_n$, prove that

$$S_n = \frac{n+1}{4\sin\frac{1}{2}\theta}\int_0^\theta \frac{P_n + P_{n+1}}{\cos\frac{1}{2}\theta}\,d\theta.$$

16294. (M. V. Arunachalan, M.A.)—Prove that

$$\frac{R_1}{1!} - \frac{nR_2}{2!} + \frac{n(n-1)R_3}{3!} - \ldots \text{ to } (n+1) \text{ terms} = \frac{1}{(n+1)2},$$

where $$R_n = 1 + \tfrac{1}{2} + \tfrac{1}{3} + \ldots + 1/n.$$

16295. (Professor Sanjána, M.A.)—Prove that three nearly equal factors of the number $150^{18}+1$ are 11375447620501, 11390625000001, 11405822629501. Also further factorize these numbers. [See *Reprint*, New Series, Vol. x, pp. 36, 37.]

16296. (T. Stuart, M.A., D.Sc.)—Find the least *positive* integral values of (x, y, z) in the equation $x^3 - 66y^3 = z^2$.

16297. (Lt.-Col. Allan Cunningham, R.E.)—Show how to find any number (n) of dissimilar right-angled triangles of equal perimeter with their sides a, b, c expressible in integers. Find the lowest solution when $n = 2, 3, 4$.

16298. (R. F. Davis, M.A.)—If $a + c = b + d$, prove that

$$(bc - ad)(ca - bd)(ab - cd)$$

is a perfect square.

16299. (S. C. Bagchi, B.A., LL.B.)—Eliminate x_1, x_2, y_1, y_2 from

$$\text{(i.)}\ (x_1 - x_2)^2 + (y_1 - y_2)^2 = \alpha, \quad \text{(ii.)}\ (x_1 - a)^2 + (y_1 - b)^2 = \beta,$$
$$\text{(iii.)}\ (x_2 - c)^2 + (y_2 - d)^2 = \delta, \quad \text{(iv.)}\ \xi(\lambda + \mu) = \lambda x_1 + \mu x_2,$$

and $$\text{(v.)}\ \eta(\lambda + \mu) = \lambda y_1 + \mu y_2.$$

Show the use of the resultant in the theory of a deformable quadrilateral of which one side is fixed.

16300. (M. T. Naraniengar, M.A.)—Eliminate θ between the equations $\cos(3\theta - \alpha) = \lambda\cos^3\theta$ and $\cos(6\theta - \alpha) = \lambda\cos^3 2\theta$.

16301. (W. J. Greenstreet, M.A.)—If r', ρ' are radius vector and radius of curvature of the inverse of a curve corresponding to r, ρ, find $r/\rho + r'/\rho'$ in terms of the angle between the tangent and radius vector of the curve or its inverse.

16302. (Professor Nanson.)—If a body be homogeneously strained so that there is no change in the volume of any portion, show there exists a family of cubic surfaces each of which is transformed into itself, and extend the theorem to a space of any dimensions.

16303. (Professor R. W. Genese, M.A..)—The moment of inertia of a thin rod, the density at any point of which varies as the product of its distances from the ends, about any line in space is equal to that of three particles, one at each end of $\frac{1}{10}$ of the whole mass and one in the middle of $\frac{4}{5}$.

16304. (H. Bateman, B.A.)—The axes of all right circular cylinders which pass through four fixed points are parallel to generators of a certain cubic cone.

16305. (W. F. Beard, M.A. Suggested by Question 16122.)—The polar of T and the straight line through T, parallel to the polar, meet one asymptote of a hyperbola at X, Y, and the other at X′, Y′. Prove that XY′ and X′Y touch the curve.

16306. (C. E. Youngman, M.A.)—Prove that in the hyperbola which subtends an angle of 60° at its centre no finite equilateral triangle can be inscribed. Is this an isolated case or part of a general theorem?

16307. (D. Biddle.)—A circle of radius equal to unity is divided into n equal sectors, and in each sector a circle is inscribed. Thus there are n small circles, each of which is in contact with the original circle and with the two adjacent circles of its own set. Within this circlet or set another set of n equal circles is described, each of which has external contact with two of the former set and also with two of its own, and so on, until the original circle can hold no more such circlets. Find their total area.

16308. (Henry Riddell, M.E.)—If two circles intersect, the diameter of the pedal circle of any point on one of them, with regard to any triangle inscribed in the other, and having the common chord as base, bears a constant ratio to the distance of the point from the vertex of the triangle. This ratio is equal to that which the double chord, extending across both circles at the extremity of and perpendicular to the common chord, bears to the diameter of the circle upon which the point lies.

16309. (Professor Cochez.)—Lieu du sommet A des triangles ABC pour lesquels BC est fixe et tels que $(a^2 + b^2 + c^2)/\text{surf. ABC} = K$.

OLD QUESTIONS AS YET UNSOLVED (IN OUR COLUMNS).

11583. (Professor Lampe, LL.D.)—A pendulum gives seconds for small deviations; prove the duration of a complete oscillation with the deviation of 179° 59′ to be approximately 6·5 seconds, whereas it becomes infinite for 180°.

11626. (Professor Neuberg.)—Si le foyer F d'une parabole P est fixe et que la tangente au sommet roule sur une courbe donnée Δ, l'enveloppe de P est l'antipodaire de F par rapport à Δ.

11641. (H. J. Woodall.)—Solve the differential equation

$$(d^2x/dt^2) + a\,(dx/dt) - (b/x)\,.\,d^2/dt^2\,(\sin\theta) + cx = 0,$$

in which θ is always small and may be assumed to be very approximately a harmonic function of t. Is there a physical interpretation of this equation?

11643. (R. W. D. Christie.)—Show how to arrange the signs so as to make the following equations true:—

$$1^n \pm 2^n \pm 3^n \pm \ldots \pm (2^{n+1})^n = 1^n \pm 3^n \pm 5^n \pm \ldots \pm (2^{n+2} - 1)^n = 0.$$

Ex. gr.: $-1^2 + 2^2 + 3^2 - 4^2 + 5^2 - 6^2 - 7^2 + 8^2$
$$= -1^2 + 3^2 + 5^2 - 7^2 + 9^2 - 11^2 - 13^2 + 15^2 = 0.$$

11814. (T. Muir, M.A., F.R.S.E.)—Given

$$u \equiv (a, b, c, d \between x, y)^3 + c = 0.$$

Show that $(d^2y/dx^2)\,(du/dx)^3 = 2c \begin{vmatrix} a, & b, & c \\ b, & c, & d \\ y^2, & -xy, & x^2 \end{vmatrix}$, and generalize.

11846. (A. E. Jolliffe.)—From four real foci of a nodal cubic, the tangents which do not pass through the circular points are drawn to the curve. Prove that they all touch the same conic.

NOTICE TO CORRESPONDENTS.

It is requested that all Mathematical communications should be sent to the Mathematical Editor,

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The Educational Times.

The Present Position of German in English Education.

THE position of German in English education, never very well established, is now seriously menaced. On all grounds the study of German is most important. On the one hand, the two great Teutonic and Protestant Powers of Europe ought thoroughly to understand each other, so as to avoid the misconceptions readily exaggerated by the less enlightened press of both countries. On the other hand, in all branches of knowledge the output of Germany is so vast in quantity and so valuable in quality that English students cannot afford to dispense with ready access to it. But it is doubtful how far either the English public or those responsible for the direction of English education have realized the gravity of the situation. It is true that, in the highest forms of our chief public schools, and on their modern sides, German has gained and kept an honourable place. But the statistics of the Oxford and Cambridge Higher Certificate show that rather fewer than three hundred candidates offer German as against fifteen hundred offering French. In the Lower Certificate examination the discrepancy is equally striking: French is offered by nearly a thousand, German by just over two hundred. Nor does the action of the Board of Education give much encouragement to the advocates of German. In a very large number of schools considerations of time do not allow more than two languages besides the mother tongue to be taken up; in most cases the competition is between Latin and French on the one hand, and German and French on the other. In the opinion of the average Englishman a knowledge of French, or an attempt to secure it, is essential; and thus the real struggle is between Latin and German. In the regulations of the Board of Education it is required that in every school in which two languages other than English are taken, and Latin is not one of them, the Board must be satisfied that the omission of Latin is for the educational advantage of the school. In other words, the *onus probandi* is thrown on every school that prefers German to Latin.

Let us examine somewhat closely the arguments on each side. The ordinary arguments for insisting on Latin—and they are by no means trivial—are succinctly stated in a circular of the Board of Education referring to the regulations above mentioned:—

> The justification for this is that a study of Latin is an essential part of a complete modern education. No study of the development of European institutions is possible without knowledge of Latin, for in it are contained the records of the development of law, religion, literature, and thought. Latin is an essential instrument for the educated use of the vocabulary of the English language, and a knowledge of it is necessary to any scientific study of the Romance languages. A knowledge of the structure of the Latin language is the most valuable help to understanding the general principles of the European languages, and its regular and formal syntax is a valuable corrective to the loose phrasing which easily arises from the syntactical freedom of modern English.

As to the first point, well-directed historical study would suffice for all but specialists, without giving time to the language. Towards the understanding of the Latin element of the English vocabulary a knowledge of French will go a long way. The scientific study of the Romance languages is again rather within the domain of specialists. As to the last point urged in the circular, both French and German, in different ways, may be utilized to promote the clear and accurate use of our own language. Other arguments in favour of the preponderance of Latin which, though not formally stated in controversy, are unconsciously present to the minds of its advocates, are based on a different class of considerations. To have made an attempt, however unsuccessful, to learn Latin is popularly looked upon as evidence, for social purposes, of a liberal education. Again, it is often supposed that any University graduate, however illiterate, is capable of imparting the elements of Latin—at any rate, in a routine fashion.

In favour of German we have not only the grave considerations brought forward at the beginning of this article. The desirability of a sympathetic understanding of Germany and of easy access to the work of German investigators need not be dwelt upon at length. But the language itself has distinct educational advantages. Its structure differs so widely from that of English that its accurate study naturally leads to clear thinking and correct expression in our mother tongue. Its literature possesses a distinctly classical character, and at the same time introduces the student to many lines of modern thought. It abounds, too, in works eminently adapted for school reading. It is only necessary to particularize Schiller's ballads and plays, and some of Lessing's and Goethe's prose.

Lastly, the study of German can be continued after school days, even in cases where it is not needed for any special purpose. In this respect it has an obvious advantage over the study of Latin. Even those of us who have reached a fair level of scholarship do not, either for pleasure or for the purpose of adding to our knowledge, habitually turn to Virgil or Horace, Tacitus or Juvenal. No longer does the House of Commons rejoice in the small hours of the morning over

> Nosque ubi primus equis Oriens adflavit anhelis,
> Illic sera rubens accendit lumina Vesper ;

or exclaim against a fancied false quantity in *vectigal*. No longer does the Pulteney of the day win a guinea of public money over "nulla pallescere culpa." For most of those who have received a classical education the abiding interest is in Greek rather than in Latin. We go to see the Cambridge or Bradfield Greek plays, and Mr. Gilbert Murray's admirable translations of Euripides at the Court or Savoy; but the sole survival in England of spoken or acted Latin—the Westminster Play—interests only a very limited public. It is obviously impossible to retain the study of the Greek language as a general element of education. Is it worth while to make much effort on behalf of the inferior language, whose literature is so largely indebted to the Greek studies of its educated society? The real character of the Romans is indicated by the epithets in Horace's well known lines:

> Graecia capta *ferum* victorem cepit et artes
> Intulit *agresti* Latio.

To use modern slang, they were, in spite of all their real virtues, in many respects little better than Jingoes and Philistines.

NOTES.

In a recent monthly letter to *Indian Education*, Prof. Sadler indicates how he thinks the education controversy should be settled:—

> The right and just solution of the whole problem is that, so far as practical conditions allow, every parent should be permitted to obtain on behalf of his children, in any school receiving aid from public funds, the kind of religious teaching acceptable to his conscience. This teaching should be given—again so far as practical circumstances allow—within the limits of compulsory school attendance. Moral or secular instruction should be offered as an alternative for those children whose parents desire them to be withdrawn from the religious lessons given in the school. Every teacher should be perfectly free, without prejudice to his or her professional advancement in the future, to give or to decline to give religious teaching in the school. The way to the educational peace in England is to be found through freedom and through the full recognition of different forms of religious belief.

This is ideal; but how to get it into practice? Do not let us underestimate the forces operating against freedom and against "the full recognition of different forms of religious belief," especially those of them that are sincerely motived, as probably the more important of them are. There is certainly "little likelihood of this policy being adopted by the present Government"; but the difficulty of the Government, just as certainly, does not lie in the fact that "some of their noisiest supporters have pledged themselves against it." There is much more serious matter than noise to be reckoned with. We are afraid, however, we must agree that "the education controversy has become a sort of impasse." Out of that wretched impasse we have to emerge one way or another, and the perversity of extremists on both sides is only too likely to lead to drastic action that cool-headed people deprecate.

In view of administrative developments, it may be well to reproduce the following statement of Prof. Sadler's from the same article:—

> Three parts of English education are protected by Act of Parliament from revolutionary change by the administrative order of the Government of the time being. These are: (1) the public elementary schools, in so far as the power of the appointment of teachers is concerned and the use of those school buildings which are devoted by trust to a denominational purpose; (2) endowments which have been given for education since 1819; and (3) the older Universities as regards the general structure of their constitution and the administration of their endowments, except so far as changes desired by an individual College in its statutes are made by the Privy Council on the application of the governing body concerned. Thus the three things which are most firmly fixed by Act of Parliament in English education are: (1) the balance between the Council and the Voluntary Schools in elementary education; (2) the position of educational trusts of recent, or comparatively recent, date; and (3) the powers of the University, as distinct from the Colleges, at Oxford and Cambridge. All the rest of English education, in so far as it comes within the direct purview of Government, can be gravely affected at short notice by the administrative action of a Government which can rely on a majority of the House of Commons.

As both parties can play at "revolutionary change by the administrative order of the Government of the time being"—and there is ample scope for the game (we refrain from giving its appropriate name)—the prospect for the children, to say nothing of the teachers or of the local administrators, does not appear to be exhilarating. However, we may come to see by and by what a costly business is the transcendental and impassioned treatment of practical affairs of essential national importance.

From an interesting interview with Mr. E. H. Howard, who has just retired from the Inspectorship after thirty-eight years' good work, and confided some of his experiences to a representative of the *Yorkshire Herald*, we quote the following suggestive remark:—

> Asked as to his opinion on the schools in Scarborough, Mr. Howard replied: "The Scarborough schools are really good. The teachers have been given a free hand, and the result, in my personal experience, has been that they have been more ambitious in scope, and have shown more earnestness in framing their own schemes; and, whilst some people might think the curriculum was over-loaded by the introduction of extra subjects, those subjects have been so correlated as not really to add any extra burden to the children, but have greatly assisted in developing intelligence. For example, in any infants' school, children might read about a buttercup, the object lesson would be on the buttercup, the drawing lesson would be on the buttercup, and so on.

To be sure; you are not likely to get the best work out of a teacher or anybody else if you swathe him in red-tape. We may also add this:—

> "My great aim in life," said Mr. Howard, "has been to render the lives of children happy, so far as their school life is concerned, and to that end my attention has been directed to improve the sanitary conditions, the supply of a good staff and the necessary apparatus, and to see that, in the curriculum of the school, sufficient provision is made for variety and for recognizing the spontaneous activity of the children."

There is good sense, and good feeling; and Mr. Howard will be followed in his retirement with the kindliest and most grateful sentiments of the children, the teachers, and the community.

The discussion of the scholarship system is bearing fruit. Seven Cambridge Colleges, in announcing their annual combined examination for entrance scholarships and exhibitions, (see under "Current Events"), suggest a self-denying ordinance on the part of well-to-do candidates:—

The colleges desire it to be known that any candidate for a scholarship may signify in writing his wish not to receive the emolument of the same, if elected thereto, and that such candidate may be elected to a scholarship which shall be honorary only and without emolument, but shall carry with it all other privileges attached to the position of a scholar. The amount thus set free will serve to increase the number of scholarships or exhibitions open to other candidates.

On the face of it, indeed, one needs a little philosophy to endow another student with a scholarship that one has acquired by one's own bow and spear; and nobody, it is cynically alleged, ever really thinks that he has enough money. It is to be hoped, however, that practical virtue will justify one's belief in its existence, and that the parents and guardians of clever scholars that can reasonably afford it will adopt the delicate suggestion of the colleges. Now the proper course is indicated, we shall trust they will be guided at once by the sense of right, rather than driven eventually by the force of public opinion.

Only last month we gave particulars of the organization and successful work of the Academic Inquiry Office at Berlin; and now, in another column we report proposals of the Representative Managers of the London County Council Elementary Schools on the provision of employment bureaus in the schools, for the direction and assistance of boys and girls up to sixteen years of age. Without some such direction and assistance, the wastage of educational effort and the demoralization resulting from unemployment intermittent employment, and unsuitable employment, are enormous and deplorable. The mere onlooker may readily enough see the unfortunate effects in particular cases, but it requires some exploration to measure the mass of the mischief that is going on. Probably, the comfortable citizen will be surprised, and it is to be hoped that he will be shocked, to learn from the Representative Managers that "70,000 or 80,000 ordinary children of average ability"—that is to say, children neither abnormally defective nor abnormally clever—"who leave school every year, drift into the first casual employment that is offered, and return on our hands at 35 or 40 as 'unemployed and unemployable,' without a trade, and without either the mental or physical stamina for real profitable work." This being a single year's contribution of a kind to London citizenship, the multiplication table will evolve an appalling prospect for the future, after all necessary deductions for death and disablement. The question goes to the very heart of civic development and progress, to say nothing of the fortunes of the individual lot. The object, then, is most laudable; and the scheme while apparently workable to start with, can be always adapted to future exigencies.

Is education, after all, a really efficient agent in diminution of juvenile delinquency—and of the police rates? The Report of the Prison Commissioners recently issued shows that the number of offences by persons under sixteen years of age for the last year is less than half of that for the year 1897; and that only four under twelve years of age were sent to prison, and 724 between the ages of twelve and sixteen. A similar report comes from Australia. The *Queensland Educational Journal* notes that, "in his latest report, the Comptroller of Prisons says that, as compared with 1905, there was last year (1) a decrease in the number of youthful offenders, and (2) fewer offences were committed within the prisons. He also notes a *steady decrease, year by year*, in the total number of prisoners received, and in the average daily number in durance—for example, there were 305 fewer prisoners convicted in 1906. . . . Of course, there are many other forces working in the direction of social amelioration; but the systematic training of the young is the strongest force of them all. We are of those who believe, with Captain Pennefather, that increased powers to the police and increased vigilance in regard to truants will pay the community most handsomely. Prevention (of criminals) is better than cure—and also cheaper. It costs about £4 a year to train a child in the schools. The average cost of each prisoner is £47 per year, and the same taxpayer has to find the money."

TEACHERS' REGISTRATION COUNCIL.

Mr. Barrow Rule and all who worked with him deserve the congratulations due to those who have been before their time. There is a fresh chance of the educational reform first advocated by the College of Preceptors being effectually carried out. The Education (Administrative Provisions) Act contains the following clause (16):—

1. Any obligation to frame, form, or keep a Register of Teachers under paragraph (*a*) of Section 4 of the Board of Education Act, 1899, shall cease: provided that it shall be lawful for His Majesty by Order in Council to constitute a Registration Council representative of the teaching profession, to whom shall be assigned the duty of forming and keeping a Register of such teachers as satisfy the conditions of registration established by the Council for the time being, and who apply to be registered.
2. The Register shall contain the names and addresses of all registered teachers in alphabetical order in one column, together with the date of their registration, and such further statement as regards their attainments, training, and experience as the Council may from time to time determine that it is desirable to set forth.
3. Any Order in Council under this section may be revoked, altered, or added to by any subsequent order.
4. Such provision shall be made by Order in Council under this section as may appear necessary or expedient for transferring any funds or property held by the existing Teachers' Registration Council to the Registration Council to be constituted under this section and for winding up the business of the existing Council and thereafter dissolving the Council.
5. The existing Teachers' Registration Conncil means the Teachers' Registration Council established by Order in Council made under paragraph (*a*) of Section 4 of the Board of Education Act, 1899.

The Council of the College are unanimously resolved to join the other educational associations in asking the Federal Council to represent the views of the profession on this all-important subject. Details will be found in the report of the Meeting of Council (page 479).

At the twelfth annual examination for the National Diploma in the Science and Practice of Dairying, 59 candidates entered for the examination (29 at the English centre and 30 at the Scottish centre), of whom 38 (21 and 17 respectively) passed.

SUMMARY OF THE MONTH.

The Bishop of Manchester, speaking at the Church Congress at Yarmouth, submitted that the future of religion in the school would be secured and religious controversy minimized, if not ended, by the frank admission of the following principles: (1) Supremacy of the State in all public elementary schools. (2) Liberty to teachers who wish to give religious instruction to give it to children whose parents desire that their children should receive such instruction, and in conformity with the religious faith of both teachers and children. (3) The instruction to be given in all schools alike in school hours, without the restriction of the Cowper-Temple clause, by teachers on the school staff as far as possible, co-operation of the religious organizations being effectively secured through managers appointed by those organizations. (4) Promotion of teachers not to be affected by their religious beliefs. (5) All forms of religious instruction to be equally treated as to the cost of the instruction given, and no penalizing of schools on account of their religious teaching. (6) No school having denominational trusts to be used for educational purposes other than those of its trust deed, and no existing denominational school to be closed so long as the parents of thirty children desire its continuance. In denominational schools the teachers who give religious instruction to be appointed by the foundation managers of the school. (7) No parent to be placed in the position of being compelled to send his child to a denominational school unless he desires to do so. On such principles as those peace and an end of strife were possible, but on the basis of unequal treatment no settlement was possible.

Bishop Welldon (Dean of Manchester), Lord Ribblesdale, and Lord Stanley of Alderley were speakers at a conference in Manchester on the question whether Local Education Authorities should deal only with secular instruction in public elementary schools. Lord Stanley said that all parties were getting more and more dissatisfied with the union of Church and State. We were attempting an impossible task to organize a municipal interpretation of the Scriptures for the purposes of edification, and the sooner we abandoned it the better. Bishop Welldon spoke not as a Churchman, but as a citizen and patriot. It was, in his opinion, a vital matter to make the nation a religious nation. In the circumstances of modern life the State must be the power that would give religious character to the nation as a whole. The Churches were not strong enough to give it. He did not think it was impossible to give such religious instruction as was acceptable to the great majority of parents. He would be content and thankful to secure the mere reading of the Bible, without note or comment, and saying the Lord's Prayer, and singing one of those hymns which were the common property of all Christian denominations. If any parent objected, let him or her withdraw the child, but very few would be withdrawn. He would ask, as a conciliatory measure, no more than that; he would like more, but he did not think more possible.

The following resolution was unanimously adopted at a meeting of the Lincoln Diocesan Board of Education, held the other week, the Bishop of Lincoln being in the chair: "That this Board, while acknowledging the value of the Regulations of the Board of Education for 1907–8, so far as they propose to make large grants towards the building of new training colleges, deeply regrets that this offer has been accompanied by provisions which tend, without correspondent benefit to any one, to humiliate and cripple existing colleges, and especially to destroy their religious influence upon their students, and which throw difficulties in the way of the voluntary supply, by means of hostels, of the protection and the common life which on every ground are to be desired for students attending day training colleges in large towns."

At the Congregational Assembly at Blackpool the resolution on primary education was moved by Dr. John Massie, M.P., seconded by the Rev. J. Hirst Hollowell, who reaffirmed that no education settlement would be satisfactory which did not provide for the complete abolition of all ecclesiastical and doctrinal tests for teachers, and the establishment of effective public control over all schools supported out of public moneys. He said they further laid down five principles:

(1) That no school shall be recognized unless it be a school provided by the Local Education Authority. (2) That such a school be within reach of every child. (3) That in all such schools the school proceedings shall be opened and closed by the singing of a hymn, the reading without comment of a passage from the Bible, and the repetition of the Lord's Prayer. The Bible shall only be used to enforce and illustrate the lessons on moral and civic duties embodied in the school syllabus. (4) That parents shall not be under any obligation to cause the child to attend the schoolhouse during the religious observance. (5) That all elementary teachers shall be appointed by the Local Education Authority without any reference whatsoever to the religious faith of the teacher, who shall not be required as part of his duties as teacher to conduct any religious observance, and shall not be permitted, except on Sunday, to give any religious instruction of any special character in the school building in which he holds an appointment.

Denominational education was impracticable, and secular had to wait. The resolution aimed at what was the least unfair, for practical purposes, to the secularist and the Bible-teaching man. It left the teaching of positive Biblical truth to the Churches, offered the Authority a simple service in the school, and the use of the Bible for the teaching of moral and civic duties. The resolution might not be logical, but he thought, in the present necessity, it was practicable. A definite amendment on secular lines was moved by the Rev. Richard Lee, but the assembly refused to endorse it, and carried the original resolution with a slight verbal alteration.

Mr. Birrell, speaking at Blackrock (October 9), said the two great difficulties before any Chief Secretary were Time and Money. Referring to the deputation to the Vice-President of the Department of Agriculture and Technical Instruction pressing for building grants to technical schools, he said it was a monstrous thing, an unfair thing, that the educational work should be crippled by giving the money intended for equipment to the repayment of loans, and he would work with Mr. T. W. Russell to obtain those grants. Further:

I will do the best I can for primary education, for intermediate education, and also for university education, although that is a subject upon which at the present moment the less I say the better. I am as determined as any mortal man can be to do during the next few months all that I can in order to present in the next session of Parliament such a University Bill as will, I trust, meet with a very considerable measure of general approval.

"I say to-day," Mr. Redmond declared, at Wicklow (September 29), "that if Lord Kelvin and the friends of Belfast Queen's College will act with us in the coming session, there is no reason why Mr. Birrell may not be able to settle the University question in the coming year." No one would grudge the Belfast Queen's College anything that it could get from a settlement of it. Belfast and Cork Queen's Colleges were suffering from want of money, equipment, and up-to-date educational facilities, and he looked forward to seeing a prosperous college not only in Cork, but in Belfast, and he said to those Belfast men who differed from them in creed that, if by doing justice to the Catholics they benefited themselves, no one would be better pleased than the Catholics would be, whose only desire was to have equality of treatment. Therefore he believed that Mr. Birrell had a great opportunity, but it was well that the Government should clearly understand that Ireland would not tolerate being played with any more upon this question. The chief feature of this matter was its urgency. Every year that passed with the grievance unredressed saw a generation of young Irishmen going out into the world who could not, by the nature of things, be efficient. Every year's delay meant inadequate efficiency in every part of Ireland's national life, political, social, economic, and, perhaps, he might almost say, religious. It effectually barred the way of national progress and development, and, save and except the one great question of Home Rule, the settlement of the University question was the most urgent and vital of all Ireland's demands at the present moment.

The loss of successive Education Bills, says the writer of "Notes from the North," in the *Practical Teacher*, "has had a most detrimental effect on the question of educational administration."

Whenever a Bill was introduced, School Boards stayed their hands with regard to school building and other matters of equally pressing importance; so that the general opinion is that the Government would be well advised to introduce no new Bill until it has made up its mind definitely that it intends to pass it into law

during the session. Two professional questions, too, have suffered very much from the repeated failures of Parliament. These are Superannuation and Tenure. Some of the clauses of the Bill may yet be passed by means of Departmental Minutes, but these two questions require Parliamentary action. The question of tenure has during the past year caused the Institute's Committee much anxious deliberation, and at the present time several notices of dismissal have been issued by School Boards and managers of voluntary schools . . . principally from ecclesiastical jealousies, changes connected with the grading of the schools, or a desire to keep down the rates. . . . When it was found that no mention of tenure was made in the recent Bill, the Educational Institute called attention to the fact; but, in view of the great desire to get the Superannuation question settled, did not press the matter too strongly. They did not wish to increase the difficulty of the Government, but I feel certain that during the coming winter they will be constrained to put this subject in the forefront of their programme. There can be little doubt that the introduction of larger areas would be the best solution of the problem, but in some quarters that is considered very far off. In the event of the larger areas not being conceded, something must be asked for in the meantime. The desire for a court of appeal gains strength. . . . Anything is preferable to the present condition of affairs. It has been suggested that, if difficulty be experienced in getting the Department to act for the whole of the profession, a beginning might be made with regard to the tenure of the principal teacher. In the great majority of cases that have come under the notice of the Institute, it has been the principal teacher who has been aimed at. If that point were gained, in time it might be possible to extend its application to all members of the profession. Recent legislation—particularly departmental—has laid upon the principal teachers much more onerous and delicate work in connexion with the recommendation of junior students. If the principal teacher offends some member of the small School Board, he is likely to have his position made very uncomfortable. The question of tenure is therefore one upon which the Institute must speak courageously during the coming winter.

In his report on Secondary Education in Scotland for the past year, Dr. Struthers remarks that the most important administrative event of the year has undoubtedly been the issue of the new regulations as to grants to secondary schools. Under the new arrangements science and art will still have a prominent place in the curriculum of any school to which financial aid is extended, but all temptations to emphasize them unduly will be removed. Henceforward, the basis of grant will be the whole work of the school. The aim is to secure first, and foremost, a reasonable amount of attention to the mother tongue, and thereafter to make sure that a proper balance is observed between the linguistic and realistic sides of intellectual discipline. By the time the intermediate certificate has been gained, the mind ought to be so far formed that pupil and teacher are in a position to judge of the direction in which further study can be most profitably pursued during the remaining years of school life. Therefore, some degree of specialization may be not merely permitted, but encouraged. As matters stand at present, not only the exceptional pupil, but even the average boy or girl is required to keep fully abreast of too many subjects. Consequently, if a teacher sets his face against over-pressure, he must deliberately countenance superficiality. The alternative policy outlined above would change all this, and prevent any undue narrowing of the intellectual horizon, while subsequent study along lines that were peculiarly congenial might confidently be expected to produce a better educational result than can reasonably be looked for under existing conditions. Further, the level of attainment in the Universities would be correspondingly raised, provided they were willing to adapt themselves to the new state of things. Pupils, no doubt, would have to continue rather longer at school. But this merely means that the leaving age of scholars in secondary schools in Scotland would approximate more closely to what is customary in other civilized countries. The net result of the regulations, then, will be to give more adequate support to secondary education in Scotland, and, at the same time (it may be hoped), to point a way of escape from a difficulty that is really grave.

All the examination results were very satisfactory, except those for the commercial certificates, which were markedly unsatisfactory. With two exceptions, the ten candidates who were presented had to be rejected as failures. There has been some stirring of the waters in our large towns, but it may be doubtful whether any real progress is to be hoped for until men of business realize that lads who become apprentices at fourteen years of age, cannot possibly be expected to have received anything that is worth calling a commercial education, and that, if the prospective apprentice is to undergo any proper discipline of the kind at school, he must remain there until he is seventeen, and must consequently have privileged treatment accorded him in respect of salary or position when he does enter an office.

In a circular issued by the Scotch Education Department embodying the new regulations with regard to Leaving Certificate Examinations, discouragement is given to the haphazard presentation of pupils in isolated subjects. Every candidate admitted to the examination at all ought to have some definite form of group certificate in view. In connexion with modern languages, attention is directed to the various steps recently taken to secure that due attention is given to the acquisition of a good pronunciation. In the English tests, stress is laid on the candidate's knowledge of literary history being in all cases based upon a first-hand acquaintance with literature itself, acquired by the careful study of a few well chosen masterpieces, supplemented by more cursory reading in a wider, but no less carefully selected, range of English classics.

Prof. Francis Gotch, D.Sc., F.R.S., addressing the Faculty of Medicine at Bristol University College, put the question: "When will Bristol do what Liverpool has done and attain its educational manhood; when will it enjoy the freedom of a University?" There was no doubt, he said, that now was the psychological moment for the establishment of a new local University, and he could not believe that the enlightened citizens of Bristol were so obtuse as not to realize the trend of recent events, or so dull as not to appreciate the benefits which such a University would confer upon the city and the West of England. He was not one of those who believed in the forcing process, whether applied to children or to Universities; and Universities started at the caprice of a dead philanthropist often bore the grip of the dead hand. He believed in living benefactors and in natural growth. A University could not be effectively created in a night, like a magician's palace. It needed strong roots and a prepared soil. When would Bristol realize that in higher education organization of her teaching resources was a matter of momentous importance, and that the way to attain that was to aggregate all her scattered educational efforts in a University? Was the project unrealized because necessary funds for its initiation were not forthcoming? Then, he would point to the history of Liverpool, Manchester, Birmingham, Leeds, and Sheffield. He refused to believe that Bristol did not contain citizens as enlightened and as generous as were to be found in those cities. He fell back, therefore, upon the only explanation of their long educational minority. The establishment of higher education on a footing worthy of that great city was regarded as only one out of many other equally worthy objects; and it was not sufficiently realized that a University possessed, as compared with a college, a particular virtue, which made its creation a matter of transcendent importance.

The total necessary sum is £250,000. £44,000 has been promised, and the existing buildings and endowments count for £52,000.

A circular (574) has been issued by the Board of Education on the teaching of Latin in secondary schools. The suggestions it contains "are intended primarily for those boys' schools or for those departments of such schools in which Latin is regularly taught but in which Greek is not part of the ordinary curriculum, and in which, therefore, no attempt is made to give a complete classical education. They cannot be applied without large modifications to girls' schools, where the problem is a materially different one." The circular states further: "The regulations of the Board require that, in any school in which two languages other than English are taken, and Latin is not one of them, the Board must be satisfied that the omission of Latin is for the educational advantage of the school. The justification for this is that study of Latin is an essential part of a complete modern education. No study of the development of European institutions is possible without knowledge of Latin, for in it are contained the records of the development of law, religion, literature, and thought. Latin is an essential instrument for the educated use of the vocabulary of the English language, and a knowledge of it is necessary to any scientific study of the Romance languages. A knowledge of the structure of the Latin language is the most valuable help to understanding the general principles of the European languages, and its regular and formal syntax is a valuable corrective to the loose phrasing which easily arises from the syntactical freedom of modern

English. These considerations will give the aim of the instruction. It will be to convey (1) a careful and thorough knowledge of the structure of the language; (2) acquaintance with some of the most important authors of the classical period; and (3) as much knowledge as can be obtained of the history and life of Rome, especially during the century preceding and the century following the beginning of the Christian era. It is not recommended that any attempt should be made to teach the boys to write Latin prose or verse, except so far as elementary prose composition is necessary for gaining command over the structure and elements of the language." The circular then sets forth in detail the suggestions of the Board.

A Consultative Committee, over which Sir H. Hibbert, chairman of the Education Committee of the Lancashire County Council presided, sat in Manchester, on the nomination of the Board of Education, to consider Clause 8 of the Education Bill for Scotland, and to advise upon its applicability to England and Wales. The objects in view are to secure that a much larger proportion of boys and girls should, on leaving the public elementary school, begin and continue attendance at evening schools than at present do so, and that employers and other persons, or bodies, in a position to give effective help shall cooperate in arranging facilities for such attendance on the part of their *employés*, and in planning suitable courses for the schools and classes.

The annual Conference of the National Federation of Assistant Teachers was held at Leeds (September 30). In his Presidential address (from which we give some extracts elsewhere), Mr. W. B. Steer (Derby) stated that, while many grievances of the profession had been redressed, and a marked improvement had taken place in the conditions of the service, opposition to their further advancement was now becoming keen, and unless they were firm and united they would find themselves driven back from the position they had gained. Mr. D. Bell (London) proposed a resolution that the time had now arrived when the National Union of Teachers should be reorganized as a trade union. Mr. Bell argued that by means of a union they would have powers to control and expel members, to create a sustentation fund worthy of the name, and to refuse to work with non-unionists. A division was taken (the delegates voting by membership of their Association), and Mr. Bell's resolution was rejected by 7,389 votes to 6,120.

The National Union of Teachers have just issued their 1908 Syllabus of Evening School Courses, containing courses in twenty-seven commercial and handicraft subjects, of which the majority are divided into three progressive stages. Examinations will be held next Spring, and certificates awarded to the successful candidates in each grade. The recognized value of the N.U.T. certificates is evidenced by 10,500 entries at the examinations in 1907, an increase of 900 as compared with the previous year. The new Syllabus contains some important alterations and additions. Teachers interested in this work should write for copies of the Syllabus and specimen questions to the Secretary of the N.U.T. Examinations Board, 67 and 71 Russell Square, London, W.C.

The annual meeting of the Classical Association was held at Cambridge (October 18 and 19), Dr. S. H. Butcher, M.P., in the chair. A resolution approving of the general principle embodied in the report on Greek pronunciation, but leaving certain points of detail to be settled afterwards, was unanimously adopted. Dr. Butcher's presidential address dealt with "Greek and the Classical Renaissance of To-day." Several classical lectures were included in the programme; and three resolutions on the teaching of Latin in Secondary schools, which seem to be so obvious as hardly to require statement, were carried. The membership has risen to 1,250. Mr. Asquith was elected President for next year, when the Association will meet at Birmingham (October 9 and 10).

A meeting of the Bristol Branch of the English Association was held on October 4. A discussion on "The Correlation of the Teaching of English in Elementary and Secondary Schools," opened by Miss E. L. George and Mr. W. A. Freeman, brought to light the fact that in the boys' schools of Bristol correlation was already effected, but that in the girls' schools of the area there exist varying standards of work which, for many reasons, it would be difficult to render uniform.

The Leeds Education Committee's September report states that over a thousand applications had been received for admission to the temporary Training College in Woodhouse Lane. Virtually all the Leeds students that desired to enter the College had been admitted, and it had been found practicable also to admit the best candidates from the remaining applicants, making the total of the day students seventy-six and of the hostel students sixty-five. In view of the number of students admitted from a distance, two hostels are to be established, one to accommodate fifty women students and the other to accommodate twenty men students. The "fees of the students residing at their homes or in lodgings will be deducted from the Government grants payable on their behalf, and the balance remaining will be paid direct to the students. The Government grants payable in respect of the hostel students will be paid to the City Council as the governing body, and will be retained by that body, so that both resident and non-resident students will be in much the same position financially."

At the autumnal meeting of the Association of Chambers of Commerce of the United Kingdom held at Liverpool, Lord Brassey presiding, Mr. F. Wardle (Leeds) moved: "That it is of the highest importance that the education of boys be continued after leaving school; that employers be urged to use their influence in inducing boys to attend evening classes and to give facilities for such attendance." Sir Henry Hibbert (Blackburn) seconded. Sir Swire Smith (Keighley) said girls should be included as well as boys, and he moved to add to the resolution: "That in every locality there should be schools provided for secondary and commercial education and for teaching the scientific and artistic principles underlying local industries to boys and domestic economy to girls." Sir Albert Rollit seconded, and, the addition being accepted, the resolution was carried.

A demonstration of school singing was held (October 26) at Queen's Hall, Langham Place. Canon Lyttelton (Head Master of Eton) was in the chair, and he was supported by many well known musicians and educationists. A varied programme was presented, including vocal exercises, songs, &c., by a choir of a hundred boys from the London College for Choristers, and by choirs of girls from St. Paul's School, Paddington, and St. Barnabas' and St. Philip's School, Kensington, and sight reading by choirs of children from Hunstanton (Norfolk), and Hildenborough and Wateringbury (Kent). Mr. James Bates (the Director of the London College for Choristers and author of Novello's primers, "Voice Culture for Children") briefly explained his system; and a few short addresses were given on means of improving the speaking and singing voices of London children.

Dr. David Masson, Historiographer Royal for Scotland and Emeritus Professor of English Literature in Edinburgh University, died on October 6, at the age of eighty-five. A native of Aberdeen, and a graduate of Aberdeen University, after a brief period of local journalism he came to London, where he pursued miscellaneous literary work for half-a-dozen years till he was appointed Professor of English Literature in University College, a post he held from 1853 to 1865. He was first editor of *Macmillan's Magazine* (1858–65)—the last number of which, curiously enough, appeared in the very month of his death. For thirty years (1865–95) he was Professor of Rhetoric and English Literature in the University of Edinburgh. He wrote a considerable number of critical and historico-literary volumes, and edited fourteen volumes of Scottish history for the Privy Council Register of Scotland; but his *magnum opus* was the "Life of Milton," which Mark Pattison declared to be "the most exhaustive biography that was ever compiled of any Englishman," and which is one of the most notable historical works of the last half century. All Masson's work was marked by thoroughness, breadth, and geniality of treatment. His only son, Dr. Orme Masson, has long been Professor of Chemistry in the University of Melbourne. Of his three daughters, Miss Rosaline Orme is best known in the literary world, having contributed lives of Pollok and Aytoun to the "Famous Scots" series, and written several novels.

It is with much regret that we announce the premature death of Dr. John Strachan, Professor of Greek and Comparative Philology in the University of Manchester. Prof. Strachan was one of our foremost Celtic scholars: he was prominently identified with the movement for the revival of the Irish language, and he had a Welsh grammar in hand at his death. He

edited an edition of Herodotus, Book VI. (1891), which is said to contain the most scientific account of the author's dialect yet published; whilst he was also an authority on Sanscrit, and was a prolific contributor to philological periodicals. In 1900 he received the honorary degree of LL.D. from Aberdeen University. Dr. Strachan was born at Keith, Banffshire, in 1862. He was educated at Keith Public School and Aberdeen University, where he had a most brilliant career. At Cambridge he continued his classical achievements: he was Porson Scholar; First Class in the Classical Tripos, Part I., in 1883; Second Chancellor's Medallist and First Class in the Classical Tripos, Part II., in 1885; and he was elected a Fellow of Pembroke College. At twenty-three he was appointed to the Greek Chair at Manchester. Prof. Strachan leaves a widow (daughter of the late Dr. James Grant, his first teacher) and eight children.

The Rev. Frank Dyson died at Eastbourne (September 23) at the early age of fifty-two. A foundation scholar at St. John's College, Cambridge, he graduated in 1877 as Third Classic, Bishop Welldon being senior, and was elected to a Fellowship in 1879. After holding a chaplaincy and assistant mastership at Kelly College, Tavistock, from 1881 to 1884, he was on Dr. Wilson's staff at Clifton College, and was then elected to the Head Mastership of Godolphin School, Hammersmith, which he held till 1888. The next twelve years he passed in the arduous work of Principal of Liverpool College. In 1900, he was re-elected to a Fellowship at St. John's as junior Dean, and he became senior Dean in 1903.

The Rev. Thomas Ward Chambers, Vicar of Christ Church, South Hackney, died at the comparatively early age of fifty-seven. One of the earlier pupils of Dr. Abbott at the City of London School, he became, in 1869, Johnson Exhibitioner of Sidney Sussex College, Cambridge, and graduated, in 1872, in the Second Class of the Classical Tripos. He returned at once to the City of London School as a member of Dr. Abbott's staff, and served the school for twenty-six years, when he retired (1898) as senior assistant master, to the regret of the staff and of his pupils.

The Rev. Charles Henry Venning, one of the Assistant Diocesan Inspectors of Schools for London, died suddenly on October 14. After being three years Assistant Chaplain to the Exeter Training College for Teachers under Dr. Dangar, he became (1896) curate of St. Martin's, Kentish Town; but the work for which he was chiefly known was the inspection of religious education in Church schools, in which he had been for some years associated with the Chief Inspector, Prebendary Reynolds.

UNIVERSITIES AND COLLEGES.

(*From our own Correspondent.*)

Oxford. Either in spite of, or in consequence of, the various and sundry attacks which have been made upon Oxford in the public press, the Matriculation list of freshmen has this term reached most unusual proportions: there are 150 more than last year. Some colleges (it would be invidious to mention any names) which are pretty ready to accept men—even without the qualification of having passed Responsions—are this year in the proud position of being able to reject them. Altogether it is a "boom," and we believe that Cambridge shares in it also; so that the decay of the old Universities must be temporarily postponed. The mention of the attacks on Oxford suggests the remark that the *Times* articles on "Oxford and the Nation" have given rise to a good deal of irritation. The heading of the articles and the signature seem to imply that the "anonymous syndicate" have a right to speak for Oxford from the tutorial side. But this is far from being the case. These tutors are young men, but apart from the infallibility of youth they have no special qualifications of pre-eminence or success.

The President of Magdalen has just been re-admitted for a second year as Vice-Chancellor of the University. His friends are delighted at the success with which he has filled his dignified post, and his critics must acknowledge that as a man of affairs he is the best Vice-Chancellor we have had for a long time. It is a trying office, and there is no doubt that there is much routine work—endless boards and Committees—which the practical head of the University might well be spared: a diary of the weekly meetings would appal a Cabinet Minister, or the head of the biggest commercial company in the world.

We have two new Professorships this term and two new Professors from outside. The first is that of German Language and Literature, which has been filled by the appointment of Prof. Fiedler, who has already a European reputation; while the second—that of Pathology—has been given to Dr. Dreyer of Copenhagen, whom many of our science teachers know, as he worked under the late Regius Professor of Medicine—Sir John Burdon Sanderson—not so many years ago in Oxford.

Among Fellowship elections may be recorded the re-election of Mr. Goodrich, a distinguished zoologist, to a Research Fellowship at Merton; the election of Mr. Pidduck, of Exeter, to Queen's College; of Mr. Coupland, of New College, to Trinity as a history tutor; and of Mr. Whatley, at his own college, Hertford. Great interest is felt in the promised visit to, and stay in, Oxford, of Lord Curzon, the Chancellor: his wish is, he gives out, to study Oxford problems at first hand, and he does not apparently intend while here to supersede the Vice-Chancellor as official head of the University. He will also deliver the Romanes lecture in the Sheldonian on November 2. The subject is "Frontiers," and Lord Curzon's connexion with India will make his treatment of the question of peculiar interest.

Our by-studies are in a flourishing condition. The buildings of the School of Rustic Economy have just been completed, and Dr. Somerville is already working in his laboratory; meantime the School of Forestry is steadily making its way, and Dr. Schlich and Mr. Fisher, his assistant, have now large classes.

The *Oxford Magazine* has not yet published its tabular analysis of the Civil Service Examination, but it is said that Oxford has more than held its own in numbers, even though it has not produced any successful candidate higher than fourth; but, as there are five Oxonians in the first ten, and as half of the places awarded have fallen to the University, there is not much ground for dissatisfaction.

A large number of people were present at the Magdalen College School prize distribution on October 23, attracted, doubtless, by the fact that Dr. Warre had consented to fill the chief *rôle;* he made a very effective speech dealing with the mistaken outcry for the "purely utilitarian" subjects, and he criticised the Universities for allowing themselves to be dictated to from outside when they might well have taken the lead in determining the development of secondary education.

In matters athletic, the Association team will be handicapped in their fixtures by reason of having definitely decided to throw in their fortune with the Amateurs' Football Association, as the Football Association has refused to allow them to remain neutral. We expect great things from the Rugby team, and there was great disappointment that they succumbed so badly to the London Scottish in their first match; but it was surely a mistake to arrange so trying a game as the first match of the season.

There is a great "field"—if the term may be allowed—for the University Fours this year, and we do not ever remember so large a number as twelve. More than one college is following the precedent set by Magdalen last year and is putting on a second crew; Magdalen themselves have gone one better, and have at present three crews practising. They are the holders, and after their great Henley achievement of winning with their two crews all the three four-oared races—Stewards', Visitors', and Wyfold—they are naturally the favourites, even though there are necessary alterations in the crews.

(*From our own Correspondent*).

Cambridge. A record entry! Nearly eleven hundred freshmen have been enrolled, and there is much jubilation among the college bursars, to the accompaniment of laudatory paragraphs in the London press. There are colleges which depend for their prosperity upon the mere numbers of their men, but it is sad to see the tone taken about what is, after all, a melancholy necessity—the absorption of the unfit.

The vacation that has passed has taken toll of our well known men, In August there passed away Dr. Waraker, one of the best known Law teachers of the University. For the past few years failing health had prevented him taking any active part in University affairs, but Cambridge men of a generation past will feel that one of the well-known landmarks has gone. But the loss which came with unexpected suddenness was the death of Dr. Adam, of Emmanuel. Barely in the prime of life, he stood out as a representative of all that is best in Cambridge scholarship; brilliant promise had already been justified by equally brilliant performance. In his College, James Adam showed that he was not only a scholar, but a whole-hearted worker in the

interests of his adopted foundation. The rapid strides made by Emmanuel in past years are due mainly to his patient and self-sacrificing work. It is pleasant to think that his latest days were cheered by the brilliant success of his son in winning the first Winchester Scholarship.

To turn to more cheerful topics. The Master of St. John's College has gratified Cambridge society by exchanging the bonds of bachelorhood for the silken fetters of matrimony.

Apropos of College masterships, the Downing vacancy has just been filled. Prof. Howard Marsh has consented to live in the deserted lodge.

Scientific institutions and Government departments are getting into the way of coming to Cambridge to fill the vacancies on their staff. The latest example is the appointment of Mr. A. W. Hill, a successful Lecturer in Botany, to take the post of Assistant Director at Kew. Our younger and abler men are being absorbed by the Naval Colleges and the Egyptian Civil Service: in fact, the confidence of the outside authorities is reacting favourably upon the internal life of the University. We are trying to become equal to our responsibilities.

The appointment of Mr. Adam Sedgwick to the Professorship of Zoology is now an accomplished fact. After thirty years of devoted but ill-paid work the learned Professor is at length able to enjoy a title which should have been his at least a quarter of a century ago. Fortunately the new Professor has been too busy to grow old, so that the University may be congratulated on a most excellent bargain.

The Vice-Chancellor in his inaugural address touched lightly on the subject of the threatened Royal Commission which is to examine, and if necessary operate upon the academic body. No doubt such an inquiry would discover a few cobwebs in dark corners; but it is not the University but the colleges which should dread the bull's eye of the State policeman. The whole system of teaching requires revision, and the theory that the possession of a fellowship implies the right to become a lecturer and the power of imparting knowledge may be shown to have an unstable foundation.

The Hulsean Lecturer, Mr. Whitney, of King's, has inaugurated short courses of lectures on Church topics. The subject of the first course is the Oxford Movement, and the lecturer must be pleased with the result of his first venture. St. Edward's Church, where Mr. Whitney is chaplain, has long been regarded as the stepping-stone to high preferment, and in this case the tradition will doubtless justify its existence.

Magdalene, which has undergone somewhat a change of character in the last few years, has been selected as the College to which Prince Henry of Battenberg is to be attached. The new master, Mr. Donaldson, with his colleague, Mr. Benson, is doing wonders, and, with his intimate connexion with Eton, is reviving the glories of one of our most interesting colleges.

Political affairs are more or less quiescent. The Unionists and Tariff Reformers entertain Mr. Austen Chamberlain on November 9; but, just at present, apathy is the characteristic of party men on both sides. There is no burning question to disturb our University life. For these things we are thankful.

The Rugby Football Team promises to be exceptionally good. It is true that it suffered defeat in its encounter with Guy's Hospital, but I am told that this was not a true test. There is an abundant supply of good rowing men from the schools who send us such things, so that, in spite of the advantages of possessing Rhodes Scholars, Oxford may find that the sister University will hold its own in every department of sport.

Armstrong College.

The Principal in his report draws special attention to the financial outlook. "The future financial position of the College has been engaging the anxious attention of the Council during the past year. The requirements of University education in science, both pure and applied, are steadily on the increase, and the standard of efficiency set by the Universities and University colleges of other large English cities tends constantly to rise. It will be impossible, the Council are fully conscious, to meet these advancing requirements and to keep the College on a level as regards reputation and efficiency with similar institutions in Lancashire, Yorkshire, and the Midlands, even in the immediate future, without relying, as they are able to do, in some considerable measure on the resources of private endowment. Nay, it is probable that, without private endowment, the College will, in a few years, have to face the probability of diminished State support. The sum voted by Parliament for college purposes is a fixed amount, the allocation of which to individual institutions is left to H.M. Treasury; and their Lordships, in making their allocation, are admittedly in part guided by the amount of local support which each college is receiving. The Council, being satisfied that the time has come to bring the matter before the public mind, has appointed a Committee to take such means as it may find available to raise a permanent endowment fund of some £50,000 for the general purposes of the scientific departments of the College."

THE EDUCATIONAL LADDER.

Aberdeen University.—Fullerton Scholarship in Classics: Alexander G. Sutherland; *proxime accessit* Mary M. Hardie.

Birmingham University.—The Scholarship in the Faculty of Commerce: O. O. Bill, George Dixon Secondary School, Rotton Park.

Cambridge University.—Four new Fellows have been elected at Trinity, after a very keen competition:—Mr. A. S. Eddington (Owen's), Senior Wrangler in 1904, and First Class, First Division, Part II., Mathematical Tripos, 1905, and Smith's Prizeman in 1907; Mr. W. R. N. Lamb (Manchester Grammar School), First Class, Second Division, Classical Tripos, 1903, and First Class, Part II., of the same tripos, 1905; Mr. V. H. Mottram (St. Olave's, Southwark), First Class, Part I., Natural Sciences Tripos, 1903, and First Class (Physiology) in the same tripos, Part II., 1905. Mr. C. E. Stuart (Bath School), First Division, First Class, Classical Tripos, 1903, and First Class, Part II. in the same tripos, 1905; bracketed second Chancellor's Classical Medallist in 1905, and Craven Student in 1906 and 1907. All of the new Fellows were born in 1882. There were sixteen candidates, amongst them being three Senior Wranglers, three Double Firsts in the Classical Tripos, three Double Firsts in the Natural Science Tripos, and two who were highly distinguished in the Historical Tripos. Mr. Mottram was at the top of the poll.

Harness Prize: J. P. S. Riddell Gibson, B.A., Sidney Sussex. Research Studentship in Medical Entomology: A. H. Lees, B.A., King's.

At Emmanuel College, Alexander Wood, B.A., has been elected to a Junior Fellowship; and Studentships, each of the value of £125 for one year, have been awarded to the following members of the college:—W. Burton, B.A., N. Mutch, B.A., and K. J. Saunders, B.A.; also a grant of £75 has been made from the Research Fund to R. D. Kleeman, B.A. At the same college Exhibitions to advanced students who have not yet commenced residence have been awarded as follows:—£50 for two years to T. G. Taylor, B.Sc., University of Sydney; £35 for two years to J. C. Simpson, B.Sc., McGill University; and £35 for one year to E. P. Metcalfe, B.Sc., University College, London.

Cambridge: Newnham College.—Scholarships on the results of the Cambridge Higher Local Examination have been awarded as follows:—Clothworkers' Scholarship of £50 a year for three years: Miss G. F. Gabb (Clergy Daughters' School, Casterton), for History. Winkworth Scholarship (the same value): Miss J. M. Earle (Croydon High School), for Mathematics. College Scholarships of £35 a year for three years: Miss M. Sayer (High School, Eaton Square), Miss E. M. Smith (King Edward's High School, Birmingham), Miss M. Stead (City of London School), and Miss M. M. Hardie (Aberdeen University).

London University.—*University College.*—Bucknill Scholarship (135 guineas): T. C. Graves, Royal Veterinary College, Camden Town. Entrance Exhibitions (55 guineas each): P. V. Early, Rydal Mount School, Colwyn Bay, and University College; B. Woodhouse, Cheltenham College and University College. Chadwick Medals (Municipal Hygiene and Engineering): N. G. Dunbar, W. D. Reynolds, and J. R. Wade.

School of Economics and Political Science.—Mr. Norman Burrell Dearle, B.A. (Oxford), Senior Hulme Scholar, Brasenose College, has been elected to a Shaw Research Studentship of the value of £100 a year for two years. Mr. Thomas Jefferson Faulder, M.A., M.B., B.S. (Cambridge), has been elected to a Research Studentship of the value of £100 a year for two years.

London Hospital Medical College.— Entrance Scholarships: Price Scholarship in Science, value £120, T. D. Williams; Science Scholarships, value £60 and £35 respectively, N. R. Rawson and Mr. J. H. Lloyd; Price Scholarship in Anatomy and Physiology, G. J. F. Jessel (Oxford); Epsom Scholarship (£126), E. H. Henson; Buxton Entrance Scholarships in Arts, M. J. Cronin, and J. D. Driberg.

Extension Lectures.— The programme for the session includes an unusually interesting series of courses. The subject

of London is receiving special attention. Prof. Geddes (Dundee) will give a course on "Cities," being an introduction to the study of Civics, while four courses on "The History and Architecture of London" will be delivered at centres in different parts of London, and a series of lectures and demonstrations in different historic buildings have been arranged for Saturday afternoons fortnightly during the session. The three-year courses on Art and Architecture begun last session in the University Buildings, South Kensington, will be carried on during the coming session by Mr. Percival Gaskell and Mr. Banister Fletcher; the courses on History and on Literature at Gresham College will be continued by Prof. W. H. Hudson and Mr. H. E. Malden and Dr. Holland Rose, while a three-years' course on "The Evolution of Mankind as seen in the development of Industries and Institutions" will be carried on at University College, the first term's work being taken by Prof. Lyde on "Geographic Control of Human Evolution," while Dr. Slaughter will lecture in the Lent Term on "Forms of Primitive Society," and Dr. Haddon in the summer term on the "Distribution of Races." Last year's course on "Human Evolution as seen in the Child and the Race" will be repeated at the Goldsmiths' College, New Cross, Dr. Chalmers Mitchell giving the earlier lectures, and Dr. Slaughter and Dr. McDougall taking the later lectures. "The Evolution of Modern English Government" will be dealt with by Mr. Graham Wallas at the Morley College, while Mr. Alfred Milnes and Dr. Armitage-Smith will lecture on different branches of Economics at several centres. Amongst the other lecturers who will deal with different branches of History or Literature are Prof. Churton Collins, Prof. W. Hall Griffin, Mr. A. A. Jack, Dr. Rickett, and Mr. R. F. Hunter; while scientific subjects will be taken by Prof. W. B. Bottomley, Prof. Vivian B. Lewes, Dr. A. H. Fison, and Mr. E. A. Parkyn. The subject of Geography will be in the capable hands of Mr. G. G. Chisholm. A new feature will be a course in Music on "The Great Classical Composers," with illustrations by Mr. T. W. Surette, of Columbia University, who has a great reputation as a University Extension lecturer in the United States.

London: Pharmaceutical Society of Great Britain (School of Pharmacy).—The Hanbury gold medal, for Chemical Research Work, has been awarded to Mr. David Hooper, Curator of the Chemical and Art Sections of the Indian Museum at Calcutta, an old student of the School of Pharmacy.

Manchester University.—Rumney Scholarship: J. Smith; Ramsbottom Scholarship: A. Williams; Woodiwis Exhibition: J. C. Duff; Burnley Corporation Scholarship: W. Pilling; Gilchrist Travelling Scholarship: J. Charnley, B.A.

Newcastle: Armstrong College.—Entrance exhibitions in Science (£17 10s. each): Allan Atkinson and M. F. S. Choate. Entrance exhibition in Literature: William Gregson; Lloyd's Register Scholarship in Naval Architecture: P. Y. Brimblecombe. Newcastle Corporation exhibitions: Theonie R. Burrell, Jennie Mole, Allan Atkinson, M. F. S. Choate, William Herbertson, Isabella P. V. Sailman, Hilda Gordon, Mildred Cail, R. E. Forbester, Geo. B. Butler; Geoffrey Weyman, eligible.

Oxford University.—Mr. Edward Irving Carlyle, Fellow of Merton, has been elected a Fellow of Lincoln; Mr. Norman Whately (Radley), a Fellow of Hertford (Ancient History); Mr. F. B. Pidduck, a Fellow of Queen's; Mr. Reginald Coupland (New College), an Official Fellow of Trinity (Ancient History); and Mr. E. S. Goodrich, an Official Fellow of Merton.

Philip Walker Studentship in Pathology: J. S. Cameron Douglas, B.M. Christ Church. Theodore Williams Medical Scholarship (Pembroke): Victor T. Ellwood, Merchant Taylors' School.

Geographical Scholarship: R. L. Thompson, Keble. Brasenose.—Indian Civil Service Scholarships: R. Jones, lately Open Scholar of the College; L. S. L. Dacres, formerly Hulme Exhibitioner. Colquitt Exhibition: T. W. Heale, Commoner of the College. Jesus.—Open Exhibition in Mathematics: B. A. Bull, Technical College, Huddersfield. Open Exhibition in Modern History: R. N. Rowbotham, Mill Hill.

Satisfied the examiners in the Theory, History, and Practice of Education: S. T. Cross, Pembroke College; G. T. Kelland, B.A. Balliol College; W. G. Kendrew, B.A., non-collegiate; M. Stokes, London University; Ellis R. Leonard, Redland High School, Bristol; Jean F. Mcwilliam, Somerville College; Marguerite M. C. Pollard, Oxford House student; Ethel Stafford, Manchester University; Ida Thomson, St. Andrews University; Louisa F. Todd, St. Hugh's Hall; Zoe Walford, Somerville College.

THE ASSISTANT TEACHERS AT LEEDS.

Points from the Presidential Address delivered by Mr. W. B. Steer (Derby).

Anticipations of the Act of 1902.

Five years ago vast changes were made in educational administration. We welcomed those changes for two main reasons:—(1) they placed all forms of education under one authority, and thereby gave promise of a long-delayed but much-needed co-ordination in our national chaos of education; and (2) they secured additional financial assistance to voluntary schools, and so created a hope that our voluntary school colleagues would receive fairer financial treatment. At the same time, however, we recognized many inherent weaknesses in the 1902 Act, and only welcomed it as a first step in the evolution of a real national system. Many of us felt that education was a matter of such importance as to demand a popularly elected body for that purpose alone, and that it was bound to suffer by being placed in the hands of Councils already overburdened with work. We felt that the plan of co-optation was but an unsatisfactory attempt to remedy a defect of the Act, and that the assistance of the expert and enthusiastic educationist could not be permanently secured by so undemocratic and illogical a plan. We further felt that the establishment of such wide educational areas as the administrative counties would never result in the effective and sympathetic local management of the schools. But we carefully weighed the advantages of the Bill against its inherent disadvantages, and we finally blessed in bulk what in part we were inclined to condemn.

Disappointed Hopes.

Five years' experience of the working of the Act has seen the partial realization of our hopes, but it has also seen the verification of our fears, and even its most strenuous advocates and supporters must admit that their hopes have been sadly disappointed. They may, with justice, retort that the Act has not had a fair chance. The sad and senseless sectarian strife which has ever hindered educational development in England and Wales has been waged with increasing bitterness since 1902, and has blinded some of the nation's best men and women to many vital educational problems. . . . I will not waste my time or yours with any diatribes as to the silliness of it all from a religious standpoint, except to say that the true teacher instinctively refuses to force the cold chisel of dogma into the delicate workings of a child's mind, and that the Churches would best gain the end which they seek by placing real teachers in their schools and then trusting them. I must, however, point out the stupidity of the quarrel from the educational standpoint. A very large proportion—probably one-half—of the children who attend Church schools are the children of Nonconformist parents, and obstacles placed by Nonconformists in the way of the efficient management of Church schools are curses coming home to rest on the heads of their own children. . . .

Since the passing of the 1902 Act with all its fair promises of "co-ordination" and "levelling up" there have been five lean years marked by quarrels between implacable extremists. The process of "levelling up" is still far from complete. Co-ordination is almost everywhere still a vision of the future. . . . Far more evident than any sign of co-ordination are the ignorance of and lack of sympathy with primary education displayed by many local Education Secretaries, and the opposition of the Secondary Branch of the Board of Education to effective dovetailing of the two systems. The very great reform of placing all grades of education under one authority—a reform which made the Bill worthy of support in spite of all its shortcomings—has been rendered almost inoperative by the insistence of the Board of Education that every secondary school shall have a separate body of governors.

Realized Fears.

First, there is the fact that educational administration has proved too great a burden for the already over-burdened Councils, and that co-optation has not succeeded in remedying that defect. Members of Borough, District, and County Councils have made earnest attempts to cope with the work, but have been compelled to leave very wide powers in the hands of their officials. . . . Education is a function of the State which cannot be successfully carried out unless it is accompanied by a real and widespread public interest, and the growing officialism in matters educational is a grave menace to our national welfare. . . . On the other

hand, the co-opted members have found that their powers are largely advisory instead of administrative. Their decisions are subject to revisal by less expert, less informed, and less enthusiastic members of the Council, and the added fact that they have neither voice nor vote when the final decision is taken has detracted from the dignity and the usefulness of their position. Some, indeed, cling to the position because they are loth to sever their connexion with a work which has hitherto absorbed their interests, and because they cherish a hope that time will effect a reform in the conditions of the public service which they render. The defect is, however, inherent, and time will not remedy, but only accentuate it. . . . Thirdly, there is the fact that every member of the Council is convinced that he is an expert educationist and that he knows infinitely more about the real needs of the schools than those misguided faddists—the co-opted members—especially where primary schools are concerned. I have always been in favour of an *ad hoc* Education Authority, and the experience of the past five years has confirmed my conviction that efficiency can in no other way be permanently secured.

Summary Condemnation of the Act.

I have dealt at some length with the effect of the 1902 Act in destroying public interest in the schools because I feel that this lessened public interest is the root cause of those educational crises which have during the past year disturbed the relations existing between the teachers and the authorities, and which threaten to jeopardize the efficiency of the schools. Englishmen are so constituted that they pay quite willingly for real service efficiently rendered, and one must look deeper than the growing cost of education for an explanation of the present widespread cry for economy. The public can reconcile itself to a growing rate if it is convinced that the money so secured is expended for the welfare of the country. . . . Tersely summing up the situation, one is bound to say: "The 1902 Act has belied its promises; the secondary system has not been democratized; there has been no striking improvement in our primary system; the wide gulf between the two has not been bridged over; large classes still prevail; unqualified teachers still abound; clericalism still stands in the way; bureaucracy is an added element of danger; democracy is exercising but a shadow of control."

The Clamour for Economy.

Concurrently with all this disappointment there has been a rapid rise in the education rate, and from Dan even unto Beersheba there comes the cry of the overburdened ratepayer and the clamour for economy. . . . Economy is everywhere demanded, and we are bound as a Federation to pay earnest attention to the situation, for it is the class teacher who is the first to suffer. The clamour for economy is met, not by any curtailment of expenditure upon excessive officialdom, but always, everywhere, by the dismissal of class teachers or by the curtailment of their already meagre salaries. Economy is effected not by a cessation of expenditure upon the trappings and ornamentation of the educational machine, but by a serious interference with the effective parts of the machinery. Money spent on education offices, on education secretaries and advisers, on agenda papers, on clerks, on inspectors, whether Government or local, on buildings, on apparatus, on stationery, and attendance officers, on elaborate returns of attendance, on reports—reports—reports, is money absolutely wasted unless there are competent, earnest teachers in the class-rooms, and many economies could be effected in mere paraphernalia if the question of cost were but faced in the spirit of true statesmanship.

Then, what waste of money is involved in the dual system of inspection which now obtains in many localities! Inspection is without doubt good in moderate doses, but the schools exist not for inspection but for education, and the present arrangement makes against and not for efficiency. Cases are not unknown where the demands of one of His Majesty's Inspectors in a district have been utterly opposed to the expressed opinions of another, but it would seem to be the rule rather than the exception for the requirements of the local inspectors to be at utter variance with those of the Board of Education. Where this is the case inspection is but a drag on the effort of the teacher; a hindrance instead of a help; a preventive instead of a guarantee of efficiency. Thousands of pounds are annually wasted by Local Authorities upon unnecessary, irritating, and obstructive local inspection. If there is a real need for economy it would perhaps be well if the Local Authority would inquire more strictly into the utility of its items of expenditure.

The inadequate remuneration of the teacher is the real cause of the inadequate supply, and money now lavished on futile attempts to make the profession look attractive would be better spent in making the attraction real. . . . The problem of the financing of the schools is of so serious a character that it cannot be met by mere local efforts of economy. The widespread complaint of the overburdened ratepayer, coupled with the present appalling inequality in the incidence of the local cost, show the problem to be one of national concern, and one which cannot be solved unless highest powers of statesmanship are brought to bear upon it.

The State and the Locality.

The State now lays it down as a general principle that a parent shall send his child regularly to school between the ages of five and fourteen. This demand by the State makes it a State duty to arrange for the efficient education of the children. During the year 1905–6 the State contributed a sum of £1. 17s. 2d. per child towards the cost, the localities being required to provide the remainder. This policy has been one of a pure *laisser aller* type, as is evidenced by the fact that Whitehaven only finds another 2s. 9d. per child, whereas Hornsey contributes locally another 97s. 3d. The *laisser aller* policy has had its day, and the time has come for the State to insist that the locality shall not shirk its burden and responsibility; but the insistence must be accompanied by greater grants. This, together with the relief recently afforded by the extension of time for the repayment of loans, should ease the local burden, and make improvement again possible.

Incidentally, it is necessary to say that the training of teachers is a State duty, and that the present tendency to build and maintain local training colleges must eventually result in additional cost to the locality of a burdensome and unremunerative character. These colleges are being instituted in a time of panic, when the demand for teachers is abnormal. In the near future they will be costly white elephants, against the cost of which the ratepayer will have good cause of complaint.

CORRESPONDENCE.

[*We do not hold ourselves responsible for the opinions expressed by our correspondents.*—Ed. *E.T.*]

BRITISH EDUCATION AT THE FRANCO-BRITISH EXHIBITION.

To the Editor of "The Educational Times."

Sir,—Permit me, as Chairman of the Committee of the British Education Section of the Franco-British Exhibition, which is to be held in London next May, to direct the attention of all educational authorities, all educational institutions of every kind and grade, and all persons who take a real interest in our national education, to the paramount importance of this section, and the urgent need of active assistance being rendered to the Committee by all who have the cause of British education at heart. There will be a French section of education side by side with the British, and strenuous efforts are being made by the French Committee to make their educational exhibits as perfect and full of interest as possible.

The object of my Committee is to present as full and complete a typical representation as they can of British education in all its grades, from the infant school to the University, and with all its varied phases both general and special, and to make it of such a perfect and impressive character as shall display, from top to bottom, what is being done for the education and instruction—mental and physical—of the young people of this nation. For this purpose we are seeking to organize exhibits, illustrations, and demonstrations of our national education, as well as of science and art teaching and technical instruction, and to collect the best examples of educational work and methods from all parts of the United Kingdom. If we are to succeed—and I have full confidence that we shall succeed—and if we are to make the education section not only worthy of the prominent position assigned to it in the Exhibition, but also an adequate representation of the genius and character of the British people as displayed in their educational systems and institutions, and thereby to kindle a popular enthusiasm for education which will be of incalculable value to the nation, we shall need the help and co-operation of

all educationists. For this co-operation and help, I, on behalf of the Committee, confidently appeal.—I am, Sir, &c.,

WILLIAM MATHER,
Chairman.

Kensington, *October* 10, 1907.

P.S.—Full information with regard to the British Education section will be gladly given to any one who will apply for it to the Organizing Secretary of the Section, Mr. G. R. B. Loch, at 56 Victoria Street, S.W.

THE "MATHEMATICAL REPRINT."

AN ANALYTICAL INDEX.

To the Editor of "The Educational Times."

SIR,—It must have often occurred to the large number of contributors and readers of the Mathematical columns of your valuable paper that the enormous mass of material entombed within the pages of the eighty-six volumes of the "Reprint" ought to be made available for the purposes of the student by means of an Analytical Index. There is little doubt that such partial indexes already exist where the student of a particular branch of the subject has been compelled to compile one for his own use. At any rate, the inquiry is worth making, and if it should be found that such partial compilations exist, even if they are not quite up to date, I feel sure that workers can be found to fill the missing gaps, and do their part in the preparation of a general Index. I venture to suggest that a Subject Index is all that is needed, and that, to meet our needs, it should be based on the well-known "Index du Répertoire Bibliographique des Sciences Mathématiques." I would further suggest that, for the subjects that enter into the school curriculum, more detailed subdivision would be welcomed: a signal instance in point would be the adequate analysis of the enormous store of problems in geometrical and analytical conics. Should the publishers feel doubtful as to the financial prospects of such an undertaking, in spite of the fact that the compilation would in all probability be done by voluntary workers, there still remains the question of the advisability of issuing a subscription volume. As one gets older, the pressure on one's time becomes greater; even the best of memories becomes treacherous; and one feels more and more the need of a time-saving index to all this valuable material. Matters might be somewhat expedited if those who would be willing to purchase such a volume, or to put their names down for a subscription issue, would communicate direct with Messrs. Hodgson, the publishers. In this way the desire of those interested in our "Columns" might be rapidly tested.—I am, &c.,

W. J. GREENSTREET.

Marling School, Stroud, *September* 16, 1907.

"SPOILT FOR COMMERCE BY OXFORD."

To the Editor of "The Educational Times."

SIR,—On page 428 of your October number, you quote Sir Alfred Jones, K.C.M.G., as saying: "If I wanted to spoil a man for commerce, I would send him to Oxford or Cambridge." Let us take, as an example, the late Lord Goschen, Chancellor of the University of Oxford, Exhibitioner of Oriel College, and placed in the First Class in Classics in Moderations, 1852, and in Final Schools, 1854. I once asked him: "Did you find Oxford assist you in business, directly?"—"Yes," he said, "I found out a great fraud that had baffled our people in South America, in shipments of tobacco to England, by applying 'Mill's Inverse Deductive Method'; being sent out to South America, directly I left Oxford, by my father's firm." His father, one of the two founders of Fruhling & Goschen, Austin Friars, said to me once, in his son's house: "Some one called George our ornamental partner; I call him the driving wheel of our machine."

At the age of twenty-six, George Goschen was a director of the Bank of England; at the age of thirty-six, in the Cabinet (though he had never yet held any office under Government) and Vice-President of the Board of Trade: Chancellor of the Exchequer, 1887–92; First Lord of the Admiralty, 1871–74 and 1895–1900; &c., &c. As Chancellor of the Exchequer he saved the country nearly £3,000,000 annually for all time by the reduction of the 3 per cents., first to $2\frac{3}{4}$ per cent. and subsequently to $2\frac{1}{2}$ per cent. A fair record for a man "spoilt for commerce by Oxford."—I am, Sir, &c.,

T. W. JEX-BLAKE.

October 2, 1907.

MEETING OF THE COUNCIL OF THE COLLEGE OF PRECEPTORS.

A MEETING of the Council was held at the College, Bloomsbury Square, on October 19. Present: Dr. Wormell, President, in the chair; Prof. Adams, Dr. Armitage-Smith, Mr. Barlet, Rev. J. O. Bevan, Rev. J. B. Blomfield, Rev. A. W. Boulden, Mr. Bowen, Mr. E. A. Butler, Mr. Charles, Miss Dawes, Mr. Eve, Mr. Kelland, Mr. Ladell, Dr. Maples, Mr. Millar-Inglis, Mr. Milne, Mr. Morgan, Mr. Rule, Rev. Dr. Scott, Mr. Starbuck, Rev. J. Stewart, Mr. Storr, Mr. Walmsley, Prof. Foster Watson, and Mr. White.

The minutes of the last meeting were read and confirmed.

The Secretary reported the results of the recent Summer Examination of Teachers, and diplomas were granted to those who had satisfied the prescribed conditions. (For list, see page 480.) The prize of £10 for Theory and Practice of Education was awarded to Mr. B. S. Long.

He reported the preliminary arrangements that had been made for holding the Winter Meeting for Teachers, to take place at the College in the second week in January next. Short courses of lectures on psychology in relation to education, on methods of teaching the principal subjects of instruction, on the practical applications of the study of the history of education, and on the use of the voice, would be given by Prof. Adams, Prof. Adamson, Prof. Findlay, Prof. Foster Watson, Dr. Aikin, Mr. P. A. Barnett, and others; and arrangements would be made for visits to educational institutions in the metropolis.

The report of the Finance Committee, showing the result of the operations of the College during the first three quarters of the year, was adopted.

The representatives of the College presented a report of the proceedings of the Federal Council at their meeting on October 16. The questions considered by the Council included the salaries of assistant masters and mistresses, the curricula of secondary schools, and other matters.

It was resolved that the Federal Council be asked to call a special meeting to consider the following points in connexion with the contemplated Registration Council:—(1) The method of representation of the teaching profession on the future Registration Council; (2) the duties that shall be committed to such Registration Council; (3) the importance of committing to such Registration Council, established on a representative basis, independent powers of action analogous to those committed to the General Medical Council; (4) to communicate, by deputation or otherwise, with the authorities who are concerned with the Order in Council [referred to in Section 16 of the Education (Administrative Provisions) Act, 1907].

A Committee was appointed to consider and report whether any changes in the By-Laws of the College, more particularly those relating to the election of members of Council, are desirable; and, if so, what changes.

The following persons were elected members of the College:—

Mr. J. J. Allinson, Commercial College, Hounslow.
Mr. J. R. Churchill, B.A. Lond., Victoria Street, Burnham, Somerset.
Mr. F. L. Groves, A.C.P., St. Albans, Chevening Road, Brondesbury, N.W.
Mr. W. McCarthy, A.C.P., St. Paul's High School, Anking, China.
Mr. H. V. Webb, A.C.P., 19 Stanley Avenue, Sefton Park, Bristol.

The following books had been presented to the Library since the last meeting of the Council:—

By the BOARD OF EDUCATION.—The Organization of the Instruction in the Berlin Technical Hochschule at Charlottenburg.

By EDWARD ARNOLD.—Arnold's First Friends in Literature (6 vols.); Eggar's Elementary Algebra.

By G. BELL & SONS.—Young's First Year's Course in Geometry and Physics.

By BLACKIE & SON.—Blackie's English Texts (Bacon's Essays, Crecy and Poitiers, The Reign of Richard II.); Blackie's Continuous Readers from Great Authors (Thackeray's Braddock's Defeat, Warburton's Wanderings in Syria); Blackie's Latin Texts (Cæsar's Gallic War, VIII., Eutropius); Berwick and Barwell's D'Aulnoy's La Belle aux Cheveux d'Or; Liversedge's Elementary Botany; Meyer's Bedford High School Conversational German Grammar, Second Year; Noblet's Chateaubriand's Les Aventures du Dernier Abencérage; Scott and Jones's First Latin Grammar.

By the CAMBRIDGE UNIVERSITY PRESS.—Davison and Richards' Plane Geometry.

By W. B. CLIVE.—Matriculation Directory, September, 1907; London University Guide and U.C.C. Calendar, 1908.

By HACHETTE & CO.—Harvey's Cicero In Catilinam, I.–IV.

By MACMILLAN & CO.—Jones's Modern Arithmetic, Part I.; Nesfield's Aids to the Study and Composition of English: Russell's Elegeia; Tucker's Decursus Primus.

By the OXFORD UNIVERSITY PRESS.—Davies' Ovid's Metamorphoses, Book XI.

By RIVINGTONS.—Hartog's De Pressensé's Seulette: Savory's Hauff's Das Gespensterschiff.

Calendars of Queen's College, Cork; Armstrong College, Newcastle-on-Tyne; and Royal College of Surgeons of England.

COLLEGE OF PRECEPTORS.—TEACHERS' DIPLOMA EXAMINATION.

Summer, 1907.

The Summer Examination commenced on the 26th of August and was held in London and at the following Local Centres:—Berbice (British Guiana), Bhusawal (India), Birmingham, Blackburn, Bombay (India), Bristol, Leeds, Liverpool, Manchester Newcastle-on-Tyne, Plymouth, Stornoway.

The total number of candidates examined was 336.

The following are the names of the candidates who passed in the various subjects: (*hon.*) attached to a name, or to a letter denoting a subject, indicates that the candidate obtained Honours in the subject:—

Theory and Practice of Education.

Licentiateship.

Abbott, H. A.
Alderson, E.
Ashmau, Miss L. L.
Bradley, Miss L. H.
Buttery, W. A.
Callister, W. E.
Devereux, Miss M.
Dilger, Miss A.
Dobson, J. C.
Dolton, W. N.
Farrow, Miss M. A.
Fernley, W. R.
Goss, R. J.
Greves, Miss S.
Griffiths, R. R.
Hepworth, F.
Honohan, Miss L.
Jowett, A.
Le Richeux, C. E.
Long, B. S.
Mountjoy, V. U. A.
Radcliffe, N. B.
Sykes, A. H.
Towers, J. W.
Warner, S. F.
Whitbread, F. J.

Associateship.

Apter, H. P.
Austen, Miss E. L.
Austen, Miss L.
Austin, J.
Austin, W. S.
Barrett, Miss S.
Bateman, H. E.
Bavidge, G. G.
Beer, Miss E. B.
Benians, Miss E. E.
Benson, Miss E. C.
Birch, Miss E. M.
Bloomer, H. J. H.
Briggs, Miss E. H.
Brodie, Miss M.
Brookson, Miss M.
Cockburn, A. M.
Crosby, Miss E. E.
Cumings, Miss H. G. P.
Davies, T.
Davies, W. R.
Dickie, Miss R. A.
Donne, Miss H.
Edginton, Miss E. M.
Edmonds, H. J.
Frodin, W. A.
Fynne, R. J.
Gough-Paynter, R. A. G.
Grace, T. J.
Green, Miss M. E.
Halfyard, Miss A.
Hambly, W. D.
Harper, G. R.
Harrison, F. S.
Hart, Miss E.
Heafield, S.
Hemming, A. H.
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CURRENT EVENTS.

Fixtures.

At the monthly meeting of members of the College of Preceptors on November 13, Mr. J. L. Paton, M.A., will read a paper on "Why boys go to school: the boys' own ideas on the subject."

* * *

M. G. Couillault, B.-ès-L., will address the Société Nationale des Professeurs de Français en Angleterre on "Les Métamorphoses de Paris: Scènes et Silhouettes," at the College of Preceptors on November 30 at 4 p.m.

* * *

Specimen moral lessons, followed by criticism of the teacher's method, will be given, under the auspices of the Moral Instruction League, at 51 Bedford Square, W.C.: (1) by Mr. A. J. Waldegrave, on "A Russian Proverb," November 4; and (2) by Mr. John Russell, M.A., on "Education," November 18, at 7 p.m.

* * *

Mr. H. Millward, Hague Street L.C.C. School, will lecture to the Froebel Society on "London Local History" at the College of Preceptors on November 8 at 8 p.m. Free to members of the Society or of the College; 6d. to others.

* * *

The following lectures will be delivered to the Child-Study Society, London, in the Parkes Museum, Margaret Street, W.:—November 5, on "Play as a Factor in Education," by Dr. J. W. Slaughter, Ph.D.; November 12, on "Physical Training of Adolescent Girls," by Mrs. Scharlieb, M.D., M.S.; November 28, on "The School Clinic," by Mr. A. H. Hogarth, B.A., M.B., D.P.H., at 8 p.m.

Honours.

The University of Cambridge has conferred the honorary degree of Sc.D. upon Profs. Brögger (Christiania), Credner (Leipzig), Dollo (Brussels), De Lapparent (Paris), Nathorst (Stockholm), and Fischer (Berlin).

* * *

The University of Oxford has conferred the honorary degree of D.Sc. upon Profs. Barrois (Lille), Heim (Zurich), Lacroix (Paris), Penck (Berlin), Reusch (Norway), and Zirkel (Leipzig), and Dr. L. Mond, Ph.D., F.R.S. (nominated last commemoration by the Chancellor to receive the degree, but prevented by illness from attending the Encænia); and the honorary degree of D.Litt. upon Dr. Eduard Meyer, Professor of Ancient History, Berlin.

* * *

Durham University has conferred the honorary degree of D.C.L. upon Alderman Sir W. H. Stephenson, four times Mayor of Newcastle.

* * *

A sum of over £10,000 has been raised by friends of the late Principal Story, of Glasgow University, part of which is to be devoted to the placing of a memorial window (designed by Mr. Douglas Strachan, of Aberdeen) in the Bute Hall of the University.

The University of Giessen has conferred the honorary degree of Ph.D. upon Prof. Rutherford, of Manchester, in recognition of his work in radio-activity.

Endowments and Benefactions.

Mr. W. Waldorf Astor, who has already contributed £10,000 to the Oxford University Fund, has promised another £10,000 as soon as the first £100,000 has been subscribed.

* * *

Mr. Carnegie has intimated that he will contribute the last £10,000 required for the building and equipment of the Technical College for Aberdeen and the North of Scotland.

* * *

Mr. Carnegie has also promised another £2,000, in addition to the £10,000 he has already given, towards the completion of the buildings of the University Library, St. Andrews.

* * *

Mrs. Call, wife of Lieut.-Colonel C. F. Call and daughter of the late Edward John Trelawny, a close personal friend of Shelley, has given the manuscript of Shelley's poem, "The Keen Stars were twinkling," to the Manchester University Library; and the manuscript of Shelley's lyric, "The Magnetic Lady to her Patient," to the Aberdeen University Library. A collation of the latter with the text in Mr. Buxton Forman's 1880 edition and Mr. Thomas Hutchinson's Oxford edition (1904), by Prof. Grierson, appears in the *Athenæum* of October 12.

Scholarships and Prizes.

The next combined examination for 66 entrance scholarships and various exhibitions at Pembroke, Gonville and Caius, King's, Jesus, Christ's, St. John's, and Emmanuel Colleges, Cambridge, will commence on December 3. Candidates must be under 19 on October 1. Forms of application to be sent in by November 26, with copy of the register of candidate's birth and good conduct certificates. Apply to Mr. W. S. Hadley, M.A. (Pembroke), the Master (Gonville and Caius), Mr. W. H. Macaulay, M.A. (King's), Mr. A. Gray, M.A. (Jesus), the Rev. J. W. Cartmell, M.A. (Christ's), Mr. R. J. Tanner, Litt.D. (St. John's), or the Master (Emmanuel).

* * *

At Oxford, Natural Science Scholarships are offered as under:—December 3: Balliol College, Christ Church, and Trinity College. December 3: Queen's and Hertford Colleges. December 10: University, Lincoln, and Magdalen Colleges. January 14: Jesus College. March (date not fixed): Merton, New, and Corpus Christi Colleges.

* * *

The Association of Technical Institutions offers two prizes, each of £25, for essays on "The Bearing of Technical Education on Industrial Progress," and on "The Bearing of Technical Education on Agriculture and on Industries of a Rural Character." Each essay is to contain not more than 10,000 words. Four typewritten copies of each essay to be sent to Dr. Clay, Northern Polytechnic, Holloway, London, N., not later than January 31, 1908. Particulars from Dr. Clay.

* * *

The L.C.C. offer, in December, 18 scholarships at the National Training School of Cookery, Buckingham Palace Road, to domestic servants (age seventeen to twenty-five); and, in January, 6 scholarships to students in Midwifery (age twenty-four to forty). £25 each scholarship; six months' training. Candidates must be resident in the County of London. Apply to the Executive Officer, L.C.C. Education Offices, Victoria Embankment, E.C.

* * *

The *Scholarships and Training of Teachers Handbook* for 1907–8, just issued by the London County Council, gives particulars of the Council's scholarships and other scholarships open to London children, together with regulations for the admission of pupil-teachers, bursars, and student-teachers, and for admission to training colleges, and a list of London secondary schools.

* * *

"For the coming session (1907–8) there are *actually vacant* in Edinburgh no fewer than 160 scholarships and bursaries, the average value of which is £80 each. Glasgow can offer 140, approaching an aggregate value of £6,000. The other Scottish Universities are proportionately fortunate." So says the *Scottish Review* (October 3).

* * *

The School of Art Wood Carving (top of the new building of the Royal School of Art Needlework, in Exhibition Road, South Kensington), which has just been reopened for the session, has some free studentships vacant. Apply to the Manager.

Appointments and Vacancies.

Dr. Charles Waldstein, Fellow of King's and University Reader in Classical Archæology, has been appointed permanent Professor of Fine Art in the University of Cambridge.

* * *

Prof. Howard Marsh, F.R.C.S., has been elected Master of Downing College, Cambridge, in succession to Dr. Alexander Hill.

* * *

Sir Arthur Rücker has intimated his intention to resign the Principalship of the University of London in September next year.

* * *

Mr. Leonard T. Hobhouse has been appointed to the permanent Professorship of Sociology in London University, recently endowed by Mr. Martin White.

* * *

Prof. George P. Baker, of Harvard University, has been appointed Hyde Lecturer (in English Literature) at the University of Paris and other French Universities for the year 1907–8.

* * *

At Manchester University, Dr. C. H. Weizmann has been appointed a Lecturer in Chemistry; Mr. J. M. Pring, B.Sc., Harling Fellow, a Demonstrator in Electro-Chemistry; Mr. F. H. Gravely, B.Sc., Assistant Lecturer and Demonstrator in Zoology; and Mr. J. L. Simonson, M.Sc., a Junior Demonstrator in Chemistry.

* * *

At Liverpool University, Dr. Joseph Reynolds Green, D.Sc., F.R.S., Fellow and Tutor of Downing College, Cambridge, late Professor of Botany to the Pharmaceutical Society of Great Britain, has been appointed to the newly-created Hartley Lectureship on Plant Physiology; Mr. Edward Carey, LL.B., Assistant Registrar; Mr. J. Mercer, B.A. (Senior Wrangler), Lecturer in Mathematics. Dr. J. H. Grindley has resigned his Lectureship in Applied Mechanics to take up an appointment at Cairo.

* * *

Dr. Karl Wichmann, Professor of German, Sheffield University, has been appointed Professor of German Language and Literature in the University of Birmingham, in succession to Prof. Fiedler.

At Glasgow University, Mr. William B. Stevenson, M.A., B.D., Professor of Hebrew and Old Testament Exegesis in Bala College, University of Wales, has been appointed Professor of Hebrew and Semitic Languages; Mr. Charles Latham, Lecturer in Mining, Professor of Mining; Mr. Francis Edward Sandbach, Lecturer in German in Birmingham University, Lecturer in German; Mr. Robert Duff, M.A., D.Phil. Glas., Lecturer in Political Philosophy; Mr. Hugh Reid Buchanan, M.A., LL.B., Lecturer in Civil Law; Mr. Thomas G. Wright, M.A., LL.B., Lecturer in Mercantile Law. Mr. Sandbach, however, has been unable to accept, and Mr. Herbert Smith, M.A. St. Andr., Ph.D. Marb., has been appointed.

* * *

At University College, Reading, the following Lecturers have been appointed Professors:—The Principal (Modern History), Mr. W. G. de Burgh (Philosophy), Mr. A. L. Bowley (Mathematics and Economics), Dr. G. J. Burch, F.R.S. (Physics), Mr. F. J. Cole (Zoology), Mr. W. G. Collingwood (Fine Art), Dr. H. N. Dickson (Geography), Dr. J. K. H. Inglis (Chemistry), Dr. F. Keeble (Botany), Mr. J. Percival (Agriculture), and Mons. A. V. Salmon (French Language and Literature). Mr. B. J. Austin has accepted the title of Emeritus Professor.

The following new appointments have been made:—To be Assistant Lecturer in Mathematics, Miss Lucy Ashcroft, Newnham College, Cambridge, M.A. Dublin; to be Assistant Lecturer in Botany, Mr. William Burns, B.Sc. Edin.; to be Lecturer in Agriculture, Mr. G. E. Parham, Associate of University College, Reading; to be Lecturer in Education (in succession to Mr. J. H. Gettins, who has been appointed Principal of the Liverpool Day Training College), Mr. H. S. Cooke, M.A. Oxon., H.M. Inspector of Schools, Pretoria; to be Accompanist in the Department of Music, Miss Edith V. Powell, L.R.A.M.

* * *

At the University College of North Wales, Mr. Rufus Gaunt, M.Sc., Ph.D., has been appointed Assistant Lecturer in Agricultural Chemistry; and Mr. A. E. Chapman, B.A. Cantab., Assistant Lecturer in the Department of Philosophy and Education.

* * *

Mr. Henry Briggs, B.Sc., A.R.S.M., &c., Lecturer in Mine Survey and Demonstrator in Mining, Birmingham University, has been appointed to the new Lectureship in Mining at the Heriot-Watt College, Edinburgh.

* * *

Mr. Frank Howson, M.A., Demonstrator in Physiology, Manchester University, has been appointed Demonstrator in Physiology in the Armstrong College, Newcastle-on-Tyne.

* * *

Mr. J. R. Cunningham, M.A., has been appointed Professor of English and Philosophy in the Presidency College, Calcutta.

* * *

Mr. Barker Fairley, B.A., has been appointed Lektor in English in the University of Jena. He obtained a First Class in the Honours School of Modern Languages and Literature in Leeds University last June.

* * *

Mr. N. A. Rust, B.A. Cantab., Southcliffe School, Filey, has been appointed Head Master of the Government High School, Bareilly, India.

* * *

Mr. Osborn Waterhouse, M.A. Vict., Lektor in English, Royal Academy, Posen, has been appointed Lecturer in English Language and Literature at the Royal Albert Memorial College, Exeter.

Dr. H. C. Perrin, Mus.D., Organist of Canterbury Cathedral, has been appointed Professor of Music in McGill University, and Director of the Conservatorium, Montreal.

* * *

The Head Masterships of Cranbrook (Queen Elizabeth's) and Prescott Grammar Schools, and the Head Mistress-ship of Lichfield High School, are vacant.

* * *

Mr. Charles Coles, B.Sc., has been appointed Superintendent of Technical Instruction to the Cardiff Education Committee.

* * *

Mr. Walter Brockington, B.A., has been appointed Head Master of the Canton Municipal Secondary School, Cardiff; Miss E. C. Abbott, M.A., Head Mistress; Mr. W. J. Vaughan, B.Sc., first assistant master; and Miss Mary Jones, B.A., first assistant mistress.

* * *

The Head Mastership of Rossall School will be vacant at Easter through the resignation of the Rev. J. P. Way, M.A., after thirty years' service as house master and Head Master.

* * *

Mr. J. Eagles, A.R.C.Sc. Lond., Head Master of the Science and Technological Department, Darlington Technical College, has been appointed Principal of the Technical and Art School and Director of Studies at Doncaster.

* * *

Miss E. P. McCall has been appointed an Inspector to the Board of Education.

* * *

Mr. F. R. Oldfield has been appointed Education Secretary for the Borough of Macclesfield.

* * *

Mr. A. H. Mackenzie, M.A., B.Sc., A.R.C.S., Leeds, has been appointed Principal of the Science, Art, and Technical School, Newton Abbot.

* * *

Mr. John Matthews Judd, B.A., L.C.P., senior master at Trowbridge Secondary School, has been appointed Form Master in the Mundella Secondary School, Nottingham.

* * *

Mr. John Clarke, M.A., has resigned the Clerkship to the Aberdeen County Committee on Secondary Education.

* * *

Mr. R. O. Chew, B.Com. Man., has been appointed Lecturer on Commerce under the Technical Instruction Committee of Newry and Armagh.

* * *

Mr. M. A. Baguley, B.Sc., has been appointed Lecturer in Chemistry at the Harris Institute, Preston.

* * *

Mr. W. Keith Tait, M.A., English master, has been appointed Rector, of Thurso Academy.

* * *

Miss Jane K. Borland, M.A. Edin., Assistant Lecturer on Education, Day Training Department, University College, Bangor, has been appointed Lady Superintendent of Women Students, and Mistress of Method to the Edinburgh Training Centre.

* * *

Mr. W. P. Fuller, M.A., University College School, has been appointed Head Master of St. Clement Danes School, Holborn.

* * *

The Glasgow Provincial Committee for the Training of Teachers has made the following appointments:—Miss

Annie U. Urie, Principal Teacher of Needlework; Miss Jessie A. Falconer, L.L.A., Assistant Lady Warden; Mr. George A. Aitken, M.A., assistant master of method (primary school course); and Mr. Andrew Donald, M.A., B.Sc., assistant master of method (science course).

* * *

Mr. A. W. Priestley, house master (Junior House), Clayesmore School, Pangbourne, has been appointed Head Master of Daventry School.

* * *

Miss S. Sowerbutts, of the Vardon Physical Training College, has been appointed gymnastic and games mistress at Penrhôs College, Colwyn Bay.

Literary Items.

El Monitor de la Educación Común of August (Buenos Aires), besides its official information as "Organo del Consejo Nacional de Educación," gives interesting articles on the codification of the Enseñanza primaria, the social utility of "trabajo manual en la escuela primaria," &c., and an enthusiastic discourse by Dr. Raphael Ruíz on the fifty-eighth anniversary of the Colegio del Uruguay, founded by General Urquiza when Governor of Entre Rios in 1849.

* * *

Moderna Språk (Göteborg: Ringnér & Enewald) has assumed a new and handier form, but continues to give interesting and helpful *undervisningen i de tre huvudspråken.*

* * *

Messrs. Archibald Constable & Co. are about to publish a work on "Plant Physiology and Ecology" by Prof. F. C. Clements, of the University of Minnesota.

* * *

Mr. Fisher Unwin is adding to his excellent "Library of Literary History" a new work on "Arabian Literature," by Mr. R. A. Nicholson, M.A., Lecturer in Persian in the University of Cambridge.

* * *

Mrs. Traquair is illustrating the volume on "Saints" for the "Told to the Children Series," and Miss Katharine Cameron is preparing a set of drawings for "Undine" in the same series. These, with two other volumes, will form the autumn additions to this favourite series.

General.

Active steps are being taken for the establishment of a Chair or Lectureship in Scottish History and Literature in the University of Glasgow.

* * *

The University of Liverpool has established the degree of Bachelor of Architecture (B.Arch.)

* * *

The new Department of Economic Biology at University College, Bristol, places gratuitously at the disposal of western farmers, fruitgrowers, fishermen, &c., the resources of scientific knowledge and research.

* * *

The Dundee Training College has enrolled 234 students this year, as against 121 last year.

* * *

The Educational Institute of Scotland is about to celebrate its diamond jubilee. As its inception was practically the outcome of the action taken by a few Glasgow teachers in 1847, the interesting event is to be celebrated by the Glasgow local association. The Institute numbers some 11,000 members.

MORAL EDUCATION IN SCHOOLS.

The State, the Moral Instruction League, and some Critics.

At the Evening Meeting of the members of the College of Preceptors on October 16, Mr. James Wilson, M.A., in the Chair, the following address was delivered by Mr. Harrold Johnson, B.A., Secretary of the Moral Instruction League:—

Sacred *v.* Secular.

The curse of education to-day is that it is still generally insisted on as indisputable fact that between religious education on the one hand and secular education on the other an impassable gulf is fixed which no intelligence can bridge; whereas no such gulf need in reality exist at all and gape for the bridging. Secular education (to be education at all) must be religious; and religious education (to be education at all) must be secular. This is a truism which sounds like a paradox only because it has been attempted in the past to educate by compartments, whereas true education is only realized by seeing life steadily and seeing it whole.

Secular education, with no reaches into the infinite and eternal, no consciousness of the boundless potentialities and possibilities of our nature, no concern for other than the mere utilitarian ends which are proximately achievable—and, being achieved, leave only an *impasse*, or blind alley, for the soul—which has no commanding moral, imperative, unescapable, save at the soul's peril, the ready following of which is the soul's supremest joy, such an education, (which in truth is no education at all) is atrophied and lifeless.

And so-called religious education, which does not tend to transfigure the daily secular routine and to add a glory to the commonplace—which is directed mainly to issues *beyond* this life—which is dependent upon a restricted symbolism, and excites wonder, reverence, and awe (if at all) only for certain exceptional objects of religious adoration; which, above all, does not incite and inspire to heartfelt deed in the service of man, such an education (which in truth is no education at all) is superfluity and naughtiness.

The great need of the age is the sanctifying of the secular and the secularizing of the sacred—the secularizing of the Church and the sanctifying of the State—in short, the fusion of both sacred and secular in a higher synthesis. Meanwhile there is a life-to-death struggle engaged between the protagonists of a purely secular system of education on the one hand and the defenders of a pervading religious "atmosphere" in schools on the other; the pity of it being that, while these zealous combatants are at death-grips with each other, education, on whose behalf they are apparently both in the lists, is dying of inanition. Is it not possible that the combatants on both sides may yet be brought to learn that there is a better way of preserving and enhancing the recognized value of the object of their devotion? Are not many on the so-called religious, and on the so-called secular, side seeing life unsteadily and seeing it in part only?

The Religious "Atmosphere."

A religious "atmosphere" in the schools of the State for which the one party contends—for even the Cowper-Templeites desire surely, in their heart of hearts, that such an "atmosphere" shall pervade not only the Scripture lesson, but all the secular lessons of the ordinary curriculum as well—what must it of necessity signify to-day to many of its advocates? Does it signify the breath of life of the whole secular discipline of the school pervading every lesson and every hour, inspiring every teacher, from which all the influences and agencies operating in the school derive tone and sanctity? To some it does. To many, however, it must of necessity, and from purely practical considerations, mean a particular influence in a particular hour, operating through a particular subject and through particular agencies, from which, it is true, some faint emanations may escape to other subjects and to other hours, but which cannot now be made an essential part of the whole curriculum, cannot now be made organically and vitally one with the whole school life, and must submit to be hemmed in by all sorts of restrictions that tend to confine in narrow limits its peculiar efficacy. Indeed, in relation to the school as an organism, the religious instruction (especially in the Cowper-Temple schools) is often to be compared, say, with the vermiform appendix of the cæcum in the physical constitution, which has no longer any organic function to fulfil and exists only as a potential irritant and as a possible menacing danger. Regarded in this way the sooner it is entirely lopped off from our educational system the better.

The comparison is not unfair when we consider what religious education really is. It is an all-pervasive, all-operative influence, or it is nothing. It cannot be cloistered in one hour only of the school routine; it cannot be put off and on by the teacher in passing from lesson to lesson; it cannot emanate from one who has it not. Religious education, too, postulates religious teachers; and the demand of some that religious education be given, but that at the

same time no inquiry at all be made into the teacher's beliefs or qualifications for giving it, should be met with the withering scorn it merits. It bespeaks eloquently enough, however, to how low a level the concept of religious education in some minds has sunk. Religious education demands the religious teacher in a religious atmosphere; demands the whole man acting from his innermost soul's experience whenever occasion serves; demands unflinching veracity; demands that, if the soul is to speak at all, not even the authority of the State shall say it nay; demands that we choose our teachers by the highest moral and intellectual standards—that we subject them, before we give them a "cure" of children's souls, to the most thorough moral and intellectual discipline, and that then, without reserve or prevarication, we trust them.

One cannot withhold sympathy here from Churches like the Roman Catholic Church, which desires so ardently, and so logically, that the whole education of its children shall proceed in a purely Catholic "atmosphere." For the complete realization of this ideal, however, a Catholic State (not in word only, but in reality) is needed; that is to say, there should not only be Catholic homes, Catholic schools, Catholic churches, but an all-pervading Catholic social environment. Under existing circumstances in this country, however, the Catholic feels sufficiently secure, so far as his child is concerned, if his education in home, school, and church is received under wholly Catholic influences. But he is naturally anxious as to the "atmosphere" of the school in which the child must pass many hours of his waking day, and where the most direct educational influences are brought with intent to bear upon him. The school lost to pervading Catholic influences, he feels that there is grave danger of all being lost—especially since he is apprehensive that other influences operating in the school would not be merely non-Catholic, but frequently anti-Catholic, in their tendencies; under these circumstances he feels he cannot securely rely upon the counterbalancing influences of the home and the church, however potent these may be. The dilemma for the Catholic in a secular State is how to conserve an almost entirely Catholic "atmosphere" for his children. The inexorable sweep of events in our own country would seem to portend that it will only be possible for him to continue to have schools of his own—and even this *possibility* may not be permanent—with Catholic teachers, Catholic teaching, and a Catholic "atmosphere," on one condition—viz., that he maintain such schools entirely at his own expense, apart from any association with the State save such as arises from the further, for him, disquieting fact that the child is not only a Catholic, but a citizen; and, though it may seem hard to him that he should be required not only to maintain his own schools, and even to meet the more and more exacting requirements of the State in regard to these, but to contribute to the general State education as well, he has to remember that he also is a citizen as well as a Catholic.

How solve the difficulty?

How the State may ultimately solve this problem as regards Catholics, and a similar problem as regards Anglicans, and at the same time safeguard the interests of the rest of the community as well, is not yet declared; but the strong probability appears to be, taking into account the interests of the community as a whole, that a permanent solution of the problem can only be found (however eager the State itself may be to grant the peculiar privileges claimed) on the lines I have indicated. For the State has to consider the children of the nation as a whole, and not merely the children of one section of it. And for the children of the nation as a whole gathered in its schools no universal Church exists now to supply the religious atmosphere in which the entire national education would find its unity and inspiration. There seems also no faint shadow of possibility that within measurable time such universal Church may be an accomplished fact. The hold, too, of the organized religious bodies on the schools of the State is gone or going, and with it—and this many advocates of the secular solution do not at present at all sufficiently apprehend—something ineffably precious may go too. For a genuinely religious atmosphere in a school, Catholic, Anglican, or other, is ever something to be most treasured: and if this be expelled without adequate provision being made for the introduction of a no less genuinely religious or ethical atmosphere in its place, we have laid sacrilegious hands on life.

Meanwhile the great majority of the children in our schools ask for bread and receive a stone; and, along with an increasingly impaired or often non-existent religious education of any real efficacy, their moral education too is perilously neglected. These things must not be.

We may not, however, any longer regard the Church as the sole inspiration of the nation's educational life and as *the* unifier of its educational system; indeed, we know that, so far from this being at present the case, the Church, or rather the multiplicity of churches, is the main cause of discord and disruption in the educational world and of the retarding of educational progress.

Whither, then, shall we look for unification and inspiration once more? We have a National Church in name only. The Church of England is especially concerned with only a section—a very large section—of the nation's schools; but these schools, too, are of necessity coming (and are likely to continue increasingly to do so) more and more under the domination of the State even as regards the peculiar religious instruction and the peculiar religious atmosphere specially desired for them.

Bridge the gulf between Church and State.

For the inspiration and unification of our national educational system, we must look now mainly to the State itself; and we ask: Must this gulf between Church and State, between secular and sacred, ever continue to yawn? Must our educational system for ever be disrupted by these antagonistic and clashing forces? Must it be still contended, to the degradation of the State, that religion is too sacred a thing for it to concern itself with? Is it not possible that we may come to regard the State as no whit less sacred than the Church, and as concerned with no less solemn realities? Are we not enlarging our conception of the State to make it include functions as high as any that were once the prerogative of the Church alone? And are we not at the same time enlarging our conception of the Church to make it include functions that were formerly the peculiar concern of secular authorities? We mark a process in course of development whereby the Church concerns itself increasingly with what is secular and the State concerns itself increasingly with what is sacred. Our suggestion is that this process be continued until the present gaping gulf between Church and State, between secular and sacred, is bridged. To effect this consummation, "devoutly to be wished," the tremendous task devolves upon the laity of devoting its energies to conferring a sacredness on the secular, and upon the Church of bringing itself into closer and more energizing touch with the secular world.

And evidence is not wanting that this mighty mission is now being in some measure undertaken and accomplished. A more momentous step, as establishing an epoch-making principle, than many yet apprehend was taken last year, when the Board of Education decreed through its Education Code, which concerns itself only with the ordinary "secular" curriculum of schools, and not at all with the time set apart for "religious instruction," that "moral instruction should form an *important** part of every elementary school curriculum." We see in this a proclamation by the State that the moral education of its children is its supreme concern, and that it can no longer rely upon Churches and parents alone, or upon a particular time outside its province set apart in its schools for "religious instruction," for such effective moral education as it requires to fit children for the weighty and exacting responsibilities of modern citizenship.

The State "Atmosphere."

The State itself has set out on no less a mission than that of conferring a sacredness upon the ordinary "secular" curriculum of its schools. It is intent on creating an "atmosphere" in its schools—ethical or religious, call it what you will—and it relies for the creation of this atmosphere, as the really religiously-minded have ever done, upon the utilization to this end not of one particular hour and of one particular subject only, cut off from the rest of the curriculum, but upon the utilization to this end of every subject and of every hour and of every agency and of every influence of the school. No less than the Roman Catholic, no less than the High Churchman, it believes in "atmosphere" schools, knows that the school is justified only by an ultimate ethical quality, that this quality is attainable only through ethical teachers and ethical teaching, and through the in-breathing into the whole national educational system of a quickening and unifying ethieal spirit. The State has taken as yet only tentative action in this direction. It has been wisely scrupulous in initiating so significant a reform, and has taken every precaution not to offend any religious susceptibilities. But it will grow increasingly conscious of the imperative obligation and sacredness of the moral mission upon which it has entered in the schools, and though it will strive "to guard against doing or expressing anything in the least subversive of the authority of religion," and to avoid "any conflict of laws or clashing of canons," it will come increasingly to realize that this moral mission it has undertaken is no whit less obligatory and sacred than that of the Church, and should be inspired by natural and social sanctions as august and authoritative. The province of its teachers will be no less that of "virtue and religion," as the quotation from Bishop Butler so aptly inserted in the Prefatory Memorandum to the Code of 1906 suggests, than that of teachers teaching under the peculiar authority of particular Churches. Our present State may not fill us with awe (it would do if we realized sufficiently its incalculable possibilities for good or evil); but it will only be in proportion as we make our State divine and the claimer of the utmost devotion of its citizens—only, in short, as we communicate sacredness to the secular, that any spiritual progress will be won.

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* The *italics* are mine.

There is no fundamental reason why this loftier conception of its office by the State should receive other than the earnest approval and the most fervent well-wishes of the Churches. The mighty dream of the Roman Church may yet come true, though not in the way she dreamed; the secular State may yet become a spiritual organism of subtlest potency, and the Church a secular force in and for the world, now and here, of the profoundest import for social well-being.

Some marked evidence in this direction has been of late afforded. Leading representatives of all the Churches have united with leading representatives of the laity of the nation in the conduct, "on scientific lines," of an international inquiry into moral instruction and training in schools in the various countries of the civilized world. Secular and sacred have sat side by side on the same executive, all animated by the same common purpose, a real concern for the religious and moral education of the coming generations; and at the meetings of this executive there has not been a single note of dissension or the slightest evidence afforded of any member of it working for purely partisan interests, or for other than the highest educational and ethical ends. It would be impossible, I think, to discover a more effective symbol, than this particular executive, or the advisory council which it represents, of that higher religious and ethical unity which will one day, I believe, fuse and interpenetrate our national educational system.

Training College Conscience Clause.

But that day is not yet, and that unity which we all, however confusedly, seek is still far from being realized. Indeed the cleavage between secular and sacred in the school, between Church and State so far as education is concerned, was never more obvious than it is to-day, and the fissure has been still further widened by the recently issued Regulations for Training Colleges which for the first time extend in principle the benefits of the Conscience Clause to student-teachers in training. We read in Section 8 (*d*) of the new Regulations:—"In no circumstances may the application of a candidate be rejected on the ground of religious faith, or by reason of his refusal to undertake to attend or abstain from attending any place of religious worship, or any religious observance, or instruction in religious subjects in the College or elsewhere."

The situation we are now confronted with is one with which the satire of a modern Swift would be alone adequate to deal. But in this situation, anomalous to the verge of the ridiculous, lies our hope; for its very incongruity must sooner or later affect our statesmen if any saving sense of humour be left to them.

What then is this situation? The situation is this. *So far as the State is concerned there is now no security whatever that its coming teachers, either as children in an elementary school, or as students in a training college, will receive any religious instruction or any moral instruction whatever; whereas the State requires them to give moral instruction, and practically all the local Education Authorities* EXPECT *them to give religious instruction too.*

Now, if arithmetic were treated by the State in this indifferent and sorry fashion—if it were even possible, say, for a child at school to be excused, or to be unprovided with, any instruction at all in arithmetic, and later to pass through a training college equally with no assured instruction in this subject, and then to be set before a class and to be required or expected to teach arithmetic, we should have considerable difficulty in discovering words in our vocabulary capable of describing the ineptitude of those in the Education Department who made such conditions possible. But, however keen may be our sense of what the fitting teaching of arithmetic demands of a teacher, our sense of what the giving of a due religious and moral instruction demands of him seems woefully blunted. Just as *anyone* is ordinarily supposed good enough to become a Sunday-school teacher—one is glad to observe at last most promising signs of change here—so it would appear to be commonly thought that *any* teacher in a school of the State, without any security for his having had special training to fit him for becoming a religious and moral instructor, without any inquiry as to his beliefs or abilities as regards the supreme ends in view, may nevertheless give both religious instruction and moral instruction. Religious instruction in the schools of the State has been since 1870, so far as the State is concerned, an optional subject, wholly outside the State's province or concern save as regards certain restrictions imposed on it when given (in the way of Cowper-Temple clauses, conscience clauses, and so on—purely political regulations and safeguards). So far as State elementary education is concerned, the State is absolutely secular—requires no religious instruction, prescribes none, inspects none, pays grant for none. So far as the State is concerned, religious instruction (when given) may be given by any method, pedagogical or unpedagogical; and no breath of life from the State ever enters into it to reshape its syllabuses or transform its methods. It is the one subject that can be taught as you please (though it be the supreme subject of all); well or ill, so far as the State is concerned, matters not at all. And yet, for most schools, it is at present the one subject which supplies the teacher usually with any definite occasion for direct moral instruction. The ethical values of other subjects he has not yet been taught sufficiently to realize and utilize; and moral instruction itself, though the State requires that it should form an *important* part of every elementary school curriculum, may be incidental or systematic, and is usually so incidental as to have scarcely any existence at all. There is something rotten in the state of England when the State can in this fashion shirk utterly its moral responsibilities towards the community so far as education is concerned.

It is with such an anomalous, ridiculous, and perilous situation that we are now confronted. For nearly forty years the State has been utterly indifferent as regards religious instruction; and it has been at the same time almost equally indifferent (until quite recently) so far as any effective action it may have taken in regard to securing that any moral education at all should be conveyed through its schools. Pious utterances, on many occasions, it has, with the utmost fervency, poured forth, couched in most impeccable and inspiring language, among which is that "fine confession of faith," as Prof. Findlay well styles it, the Introduction to the Code, now an annual document. But pious utterances, even so admirable an Introduction to the Code, by themselves effect little. Faith without works is dead.

Moral Instruction Controversy.

Now the only organization which has grappled with this alarming situation with any resoluteness, persistency, consistency, or success, is the Moral Instruction League; but every saviour is anathema. Far-ranging critics must needs clap blinkers upon it, and protest that even then it cannot see further than its nose. It is just possible, however, that it sees further than its critics.

Let my hearers read through again the addresses* recently directed against the work of the League by Prof. Findlay and Mr. J. L. Paton, and tell me what single blessed ray of light to enlighten our gloom shines through either of them—what suggestion of any effectual constructive moral reform in the school. What alone does stand forth in definite nakedness in these two addresses is that old-time and dishonoured doctrine of *laissez-faire*, which, like Prof. Findlay and Mr. Paton, hails also from Manchester.

Criticism of Prof. Findlay's Views.

The starkest expression of this new Manchesterism is found in Prof. Findlay. He quotes, with manifest approval, what he styles "a most impressive plea" of Prof. Palmer, of Harvard, "for the introduction of ethical instruction into all colleges and Universities, and for the rigid exclusion of such teaching at any earlier age." Prof. Findlay's own statement in this connexion is also explicit enough—"The proper place for formal reflection upon conduct is after sixteen."

So far then as Prof. Findlay is concerned, the situation is clear enough. For children in elementary schools there should be no direct ethical instruction at all (save incidentally in response to the children's own chance questions); and, since a very considerable proportion of the scholars leave the secondary schools before sixteen, and the vast majority of them shortly after reaching that age, I gather that the same applies equally to secondary schools as well. This is startling! Here we have a proposal of so revolutionary a character that it runs counter, we might almost say, to the whole experience of the race, certainly to the experience of that portion of it which is comprised in the various religious communions, which have always given considerable place to the religious instruction of the young and no inconsiderable place to inducing in them through this agency formal reflection on conduct. Witness, for example, what the Roman Church has achieved in this direction! Said Cardinal Newman once: "Give me the children of England, and England shall be Roman Catholic." Says Prof. Findlay: Let the dear little things grow in their own sweet way! "Let virtue grow in its own time; leave these quiet waters to their own channel; let reverence and hope have a chance; leave some part of revelation, of insight, to come after you have ceased to expound. . . ." Now this is all doubtless very beautiful, and all doubtless largely true as regards the attitude that may be adopted toward Prof. Findlay's own child in the beneficent and ethical atmosphere with which kindly fates have surrounded him; but I confess to losing my patience entirely when I understand Prof. Findlay's implication to apply no less to the incipient Bill Sykes in a Bethnal Green alley. "I say quite solemnly," says Prof. Findlay, "let virtue grow in its own time; leave these quiet waters to their own channel; let reverence and hope have a chance; leave some part of revelation, of insight, to come after you have ceased to expound. . . . Experience all about him is stirring him every day, and he will respond in his own way if you will forget that you are a moralist and remember he is a child. Restraint, silence, modesty, example, are the better watchwords." Bill Sykes, jun., meanwhile smokes the fag-end of a cigarette he has scraped up from the gutter, tries his 'prentice hand on a protruding pocket-handkerchief, and lets the experience round

* *Educational Times*, May and July, 1907.

about him—the gin-palace, the tipster, the street brawl, the hooligan—stir him every day, and responds in his own way. Later on the gutter-press, thanks to such mere wit-sharpening instruction as he has received in school and elsewhere, will play upon him what tunes it pleases. Budding Bill Sykes will never reach college or university: his one chance usually of moral salvation is in a Bethnal Green Council School. "Hold your hands, ye meddlers," cries Prof. Findlay *solemnly;* "no part of us is more susceptible of morbidity than the moral sense: the young man may become case-hardened and enter on life *blasé* and indifferent"!

The Hebrew Prophets.

Both Prof. Findlay and Mr. Paton, in nearly all that they say, appear to have in their mind's eye the fortunate children of well-to-do parents, most of them attending secondary schools. The League has been concerned in the past almost entirely with public elementary schools, and has only commenced to concern itself with secondary schools in a very tentative way. And, as regards public elementary schools at least, it feels with the prophet of old that the people are destroyed for lack of knowledge. And by knowledge the old prophet understood moral knowledge—and we understand it in the same way.

"*These words, which I command thee this day, shall be upon thine heart: and thou shalt teach them diligently unto thy children, and shalt talk of them when thou sittest in thine house, and when thou walkest by the way, and when thou liest down, and when thou risest up. And thou shalt bind them for a sign upon thine hand, and they shall be for frontlets between thine eyes. And thou shalt write them upon the door-posts of thy house, and upon thy gates.*"

The old Hebrews, whose Scriptures flash out yet, through the mouths of their loftiest prophets and psalmists, the most riving moral utterances of all time, were wiser than Prof. Findlay and Mr. Paton. They believed in the power of moral knowledge early conveyed in the directest fashion and by means of the most obvious agencies. The prophets (in the pages of the Old Testament) wail and wail again and yet again over the moral *ignorance* of the people which more than anything else they dreaded. "My people is foolish, they know Me not: they are sottish children, and they have none understanding: *they are wise to do evil, but to do good they have no knowledge.*"* And Christ, the greatest of them all, said as He wept over Jerusalem: "If thou hadst *known* in this day the things which belong unto peace: but now they are hid from thine eyes."

The Moral Instruction League.

We, too, of the Moral Instruction League believe in the power of moral knowledge early and directly conveyed, in the power of ideas, of moral ideas, and above all in the power of ideals, of moral ideals, in the school. And, with the prophets of old, we dread nothing more for our country than that our children should be wise only to do evil but to do good should have no knowledge; and we would strive that "in this day" they should know the things that belong unto peace lest later they should be hidden from their eyes. And we know of no other way of conveying these things ultimately to them than by means of direct and indirect moral instruction.

We believe, too, in training, moral training, in the steady formation of good habits by constant practice, no less than do our critics. But we are of opinion that habits have no *moral* value apart from ideas. The Pharisees had most scrupulous habits, which they had ingrained into themselves with the most meticulous care; but they had within them no motive power toward a higher moral life which vitalizing ideas alone may set in action. They were the formalists of habits, and the ethical insight of the Master penetrated their hollowness: His righteous anger was hurled against them, and not against publicans and sinners. In merely *formal* moral teaching, too, we have no more faith than our critics. Moral faith, moral beliefs alone prevail and are strong.

But how to get this moral faith, these moral beliefs into our schools—that is the question. The way does not lie along the line of State inaction and indifference. It does not lie along the line of securing for the teacher no definite and assured moral instruction at all, and then requiring of him to give such instruction; nor in the Manchesterism of *laissez-faire;* nor in the ethicizing of such humanistic portions of the elementary school curriculum as literature and history while these scarcely in any adequate sense exist at all. The way lies along the line which the Moral Instruction League has followed, and only along that line. That fine confession of faith, the Introduction to the Code, was a direct result of the League's propaganda: the provision for Moral Instruction in the Code (however inadequate it may be, but epoch-making as establishing a principle) was effected by the League alone. In the Prefatory Memorandum to the Code of 1906, too, the Board of Education has given its imprimatur to the propaganda of the League: "It is therefore desirable that where systematic teaching of this subject (moral instruction) is practicable such teaching should be direct, systematic, and graduated." The widespread discussion just now of this momentous question of moral education in schools, the serious efforts that are at last being put forth to grapple with it, the very addresses of Prof. Findlay and Mr. Paton with which I am now dealing, all owe their origin to a very large extent to the propaganda of the Moral Instruction League, which has forced the resolute consideration of these questions to the front. The moral training inquiry, which Prof. Findlay naïvely wishes had preceded the propaganda of the League, could only have arisen as a direct result of that propaganda, and not otherwise. This much it is necessary under the circumstances to say.

The League's Syllabuses and Text-books.

I would ask, too: In what way has the League shown itself narrow in action, outlook, or tendency? If there are grave omissions, as Prof. Findlay imputes, in the League's syllabus, from the standpoint of Christian ethics, what are they? And, since they are "grave," why has he not called attention to them? The syllabus is continually under revision, and no suggestion for its improvement from the point of view of the essentially Christian ethic would, I am sure, pass unheeded. Is it the teaching of *love* that is omitted? But Mr. Paton tells us, and we agree with him: "The way to teach love is not by precept." We have no heading for *love* in our syllabus. Love may, nevertheless, be wondrously illustrated and the beauty of it be revealed through story. Is it the teaching of *reverence* that is omitted? Yes, but here again, is not this profound and untellably precious sentiment incommunicable by the ordinary ways of teaching, and subtly communicated through the whole atmosphere of the school or not at all? And yet I have reason to suspect that it is just such omissions as these which Prof. Findlay looked for, and damned us because he found them not. Had he found them, we should have fared the same.

Then, as to those set moral lessons which loom so large through our critics' microscopes, but which have relatively small proportions through our own long-distance telescopes! What is our actual policy in regard to these?* How many moral lessons a week do we ask for? We ask for one. All the other moral instruction conveyed during the course of the week we would desire to be conveyed more by indirection and suggestion, but we demand one lesson of a direct, systematic, and graded kind, in which the scattered thoughts and ideas of the week would find their focus and have some fixity and conscious moral purpose attached to them, in which comprehensive and thorough treatment would be exacted, and through which teachers would be disciplined and would obtain a survey of the full scope and plan of their moral mission, and have opportunities of filling up gaps which a purely incidental treatment would leave open. We ask for this lesson not as one cut off from the rest of the curriculum, as the Scripture lesson usually is, but as a lesson, on the contrary, which shall be the radiating centre of indirect moral influences to pervade the whole curriculum, without the presence of which, too, even indirect moral instruction is likely to be largely absent. We shall resist, in short, with all our power the putting of morals into a compartment and repeating, to use Prof. Findlay's expression, "the error of the Churches." We shall resist no less the creation of a specialist class of teachers (unnecessarily pre-supposed by Prof. Findlay) to give these moral lessons: we have no desire to do anything toward establishing another priestly caste.

As to our syllabuses and text-books, these are scaffolding, but scaffolding absolutely essential for the majority of our teachers to build from for a very considerable time to come. They will be superseded, but the first step is through them: "precept upon precept, precept upon precept, line upon line, line upon line, here a little and there a little"; for this is a stiff-backed generation! There is need of a good deal of preliminary scaffolding ere the Temple of Education is builded: when the goodly building is there, the scaffolding may be pulled down; but not till then. The Law of Moses was a necessary stage in the evolution toward Christianity. "The Law hath been our tutor to bring us unto Christ," said St. Paul. The discipline conveyed through graduated moral instruction syllabuses and moral-lesson text-books is a stage through which most teachers will need to pass before the ideal is reached.

The League and its Critics.

Let me be yet more explicit, and expose as clearly as I may the differences that appear to exist between ourselves and our critics. I turn over Mr. Paton's address and discover the following headings† to sections:—"Doses *versus* Diet," "Ideas *versus* Practice," "Directness *versus* Suggestion." Mr. Paton has a fondness for sharp antitheses, but his indulgence in them confines him to a very narrow

* Jeremiah iv. 22.

* I would observe here that no organization should be judged merely by the route which it has travelled, but also by the goal toward which it moves.

† [The point seems purely technical; but we think we ought to relieve Mr. Paton of direct responsibility for the "headings."—Ed. *E. T.*]

world. We perceive value not only in diet, but in doses; not only in practice, but in ideas; not only in suggestion, but in directness. Instead of contrast here, we discover complement. This much at least is clear in the addresses both of Mr. Paton and of Prof. Findlay—more so in the case of the former than of the latter—that they unduly disparage the power of moral ideas and the influence of moral ideals upon conduct.* I do not think for one moment that they wish to convey this, but they are unfortunate enough anyhow in conveying it. The siren Antithesis lures Mr. Paton on the rocks, and the siren of Academic Hauteur sings too sweetly unto Prof. Findlay. "Between us and you there is a great gulf fixed" is the text of their homilies; and there is no such gulf at all. There is prejudice, and this is not a moral, but an immoral, idea. Mr. Paton knows, for example, that the terms "non-theological" and "non-religious" are not synonymous. It suits him, however, to apply to us the latter term when the former alone in any way fits us, in the same way as it fits the Board of Education, a chemist, or a greengrocer. But he goes further than this: he charges us with wishing to establish godless schools, and to leave out in the schools "the exploded fallacy called God." This is false.

Let us dwell just one moment on this term "non-theological," whose embodiment in our "object" I suspect to be the cause of considerable prejudice directed against the League. At a time of transition, and for immediate practical purposes sharp distinctions are often necessary. This clear-cut demarcation, however, must not hold as in a title-deed. What we wish to convey by the term *non-theological* is certainly not *non-religious*, but rather that which lay at the root of the French word *laïque*, or of our own word *secular* before their deeper significance was blurred. Perhaps *non-ecclesiastic* conveys really what we mean, in the sense that we desire a moral education in the schools of the State for which the State as State, the laity as laity, and not the Church as Church, ecclesiastics as ecclesiastics, shall be responsible. We desire, however, no roof to the sky, no limit to human devotion, no fetters for the mind, no reins for the imagination, no *impasse* for the soul. We know something of the meaning of awe, something of the meaning of reverence, something of the mystery and obligatoriness of that commanding moral imperative which at times thunders like the prophet's "Thus saith the Lord"; and, though we have not "Lord, Lord" on our lips, maybe we have Him in our hearts. We know something of the passion and devotion of human service. We love the Beautiful and the True no less than we love the Good. We would live resolutely in the Whole.

Some of us, too, feel the need of a unifying and supreme principle, in which all moral education would be embraced and from which, as from an everlasting and unquenchable source, all moral power would be derived and receive unchallenged authority, if education is to grapple with the whole man and to attain to the deepest recesses of the human soul. Some of us feel that even the lofty idea of social solidarity—the most vitalizing motive in French education to-day, the realized sense of the bond that knits in one all the diverse elements of the human race and makes all depend on each and each on all, is still inadequate to the demands and the far-stretches of the soul; and that beyond the social unity there is a cosmic unity—which we may all in our own language and in our own tongue, in whatever feeble lispings, still call God—upon which in its turn even the highest social solidarity depends. To some of us some such unifying cosmic thought alone appears capable of confronting man with a sense at the same time of his unutterable majesty and of his unutterable frailty: for the soul knows no confines and brooks no limits, and the only language it ever hears, and the only moral appeal that ever stirs it, is touched with some glow of the ideal and the infinite.

Is it not possible that we may yet all come to see that thoughts such as these are religious thoughts, and that, even though God be not named, He is nevertheless there? Is it not possible even yet to build up a Moral Education in our schools which shall be religious in spirit, and prepare the way for the Churches, each in its several way, to build upon?

Tendencies to Unity.

The present dualism in education—of what is called religious education, on the one hand, and of secular education, on the other—must be done away with. Education is one, and not two. It is this unity we seek. How may we find it? I believe we are moving toward it. The Salisbury Diocesan Board of Education has recently published, mainly for Church of England schools, a Syllabus of Moral Instruction, for which the Bible supplies the basis. It has attempted to construct a systematic, graduated course of moral instruction with Biblical illustrations and inspired by Biblical ideas; but the main end of the scheme is an ethical one. Are we not here coming into union at last?

I believe that the differences that divide us lie largely in the fact that two tremendous factors in the religious life of a Christian nation are the Bible and Christ, conceptions of which are so widely different. The formal cult of a Person and a Book is rending the nation in pieces. But, in proportion as these factors are regarded more and more from the ethical point of view, so far as our schools are concerned, these differences will to that extent cease to exist. Also, while fully recognizing the immense importance of these factors, I think the generality of people will come more and more to see that the religious life does not necessarily centre for all men peculiarly in these two factors, but may exist wholly independent of them, as with Mahommedans, Buddhists, and others. Religion is an inward experience, and centres necessarily neither in a Person (however divine) nor in a Book (however inspired). Religion, as an inward experience, unites us all; merely formal religion, handed down authoritatively through a Book, a Person, a priest, a Church, divides us all.

I can conceive, then, that the time may come when we shall regard as the most religious service with which to open in the morning our schools such a service as the head teacher can most conscientiously give. I can conceive it possible, for example, that one head teacher would prefer to open school with a hymn, another with some glad song; that one would prefer a reading from the Bible, another a passage from some high literary source or Scripture other than the Bible; that one would open with prayer, and the other content himself with the inducing in the school life generally of a more silent aspiration toward higher things. Of one thing, however, I am sure—that only in proportion as a teacher may give himself and speak from his whole personality and in the light of his deepest experiences through all the subjects of the curriculum and through all the agencies of the school life, will any moral education of value proceed from him. Through the moral lesson, then; through the opening service, probably followed by a ten minutes' informal talk on some subject involving ethical considerations; finally, through all the lessons of the curriculum and through all the operations of the school, a real religious spirit, common to all who are in any way stirred toward ideals, might breathe, the teacher being at liberty to gain inspiration for himself from all high sources and to illustrate his lessons and make his work effective through these. Some teachers in a training college, *e.g.*, could exert through "Sartor Resartus" a deeper moral influence than through the Bible; they should be free to choose. The main thing is the religious or ethical influence—through what channel, so it be there, matters not at all.

The main end of us all, then, should be to strive for an effective moral education in schools, and to do all in our power to communicate to it that religious or ideal spirit which, whatever our differences, is common to all who aspire. What we call secular education, —that which many so gravely apprehend—if it be not undertaken in a narrowly materialistic spirit, but with the idea of gaining inspiration for it from all loftiest ethical and spiritual sources, may prove a stepping-stone to the realization of that unity which in a common education may yet embrace us all.

Mr. Orchard thought that the Moral Instruction League deserved great credit for insisting that direct moral instruction on a religious basis should be given to the child at a very early age. It was important that the child should be surrounded by a religious atmosphere; but he was not quite sure as to what the League meant by religion. If it meant aspiration after a high ideal why not take the highest ideal—the ideal of Christ as presented by the Bible. If the instruction was to be based on the Bible and the name of God was not to be mentioned surely that was most inconsistent. In order to produce good conduct, good thoughts and good aims as well as mere outwardly respectable conduct, it was necessary to have a supreme law, a supreme ideal, and a supreme motive. Without these things no system of moral instruction could be satisfactory.

Mr. G. A. Smith thought that the last speaker had misunderstood some points of the lecture. The object of the League was to promote ethical teaching in Schools, and they regarded direct moral instruction as an essential part of such teaching, believing that only by this means could children be guarded against the pitfalls of life. For this purpose the League offered a definite body of moral teaching which was based on human experience and which they believed would be found generally acceptable to teachers. While they recognized the weight that might be given to moral teaching by the authority of religion, they preferred to leave it to the teacher to select the authority which might seem to him the most suitable, and thus they avoided coming into conflict with the diverse religious beliefs of those who had charge of the education of children. The subscribers and members of the League included persons of many different religious sects, but they were united in supporting the

* Indeed, Prof. Findlay informs us in a stray sentence that "teaching, although it holds the second place, can certainly be made a great lever in the formation of character."

aims of the League. He could not agree with Mr. Orchard that the Bible was the only or even the most suitable source of moral instruction, and for some reasons he considered it undesirable to place it in the hands of young children.

The CHAIRMAN remarked that reformers must needs postulate a condition of things requiring reform to justify their existence, and not infrequently they exaggerated—quite unconsciously—the evils they sought to remedy. It seemed to him that the lecturer's presentation of the case for the Moral Instruction League ignored the actual every day moral training given in English schools. It was obvious from the remarks of previous speakers that the phrase "Moral Instruction" was one of uncertain meaning. The lecturer had spoken, if he rightly caught his words, as if the terms "religious," "ethical," and "moral," were interchangeable, and had used the term "secular" as the opposite of these. Now it seemed to him that a distinction is rightly drawn between "religious" and "ethical," or "moral"; and, further, that "secular" and "moral" are not mutually exclusive terms. He regarded ethics or morals as a purely secular subject, as much so as mathematics or physics. A science of morals supplies us with reasoned rules of life, tells us what is right conduct and why it is so. It is built on the accumulated experience of the past, tested, enlarged, or modified from age to age very much as other sciences are within their own spheres. Aristotle elaborated a system of ethics quite independent of religion. Buddhism was an Atheistic religion, and yet the highest morality ever given to the world before Christ was taught by men of this creed, who worshipped no God or gods. Aristotle derives the word "ethics" from the Greek word signifying custom. Morality is derived from the corresponding Latin word *mos;* so that ethics and morals may be taken as equivalents. Now it is important to keep in mind the idea which presided at the coining of the terms "ethics" and "morals"—viz., custom. A custom is established by repeated acts, the result of such repetition being habit. Custom and habit thus stand to each other in the relation of cause and effect. It was the object of education to provide for the cultivation of good habits, and Aristotle earnestly inculcated the need of early accustoming the child to right practice with a view to the formation of virtuous habits. Bacon enforces the same precept. "Many examples," he says, "may be put of the force of custom both upon mind and body; therefore, since custom is the principal magistrate of man's life, let men by all means endeavour to obtain good customs. Certainly custom is most perfect when it beginneth in young years. This we call education, which is, in effect but an early custom." He knew of no place where the practice of morality was more completely carried out than in a typical secondary school. The whole atmosphere, work, and government of such a school was of necessity moral. Every hour of the day opportunity arose for doing acts essentially moral—enforcing order, industry, veracity, checking excesses, curing defects, sterilizing evil tendencies by cultivating their oppositites. The teachers, setting before themselves the task of developing harmoniously, all the powers mental, moral, and physical of their pupils, and the latter co-operating loyally for the accomplishment of the same end. The tactful distribution of praise and blame generally sufficed to maintain discipline, and where it did not resort was had to corrective punishment. He could not see what opening there was for the operations of the League in the schools he had been describing. Probably, elementary schools, where the religious difficulty was still intractable, afforded better opportunities. There was no religious difficulty in secondary schools. He did not, however, mean to discuss religious instruction, as it did not seem to him to arise out of a lecture on moral instruction.

Mr. JOHNSON having replied to the remarks of the speakers, a vote of thanks to the lecturer concluded the proceedings.

CONFÉRENCES FRANÇAISES.

SOCIÉTÉ NATIONALE DES PROFESSEURS DE FRANÇAIS EN ANGLETERRE.

L'ÎLOT DU GRAND-BE.

Par M. A. CANIVET.

LE dernier samedi de septembre, M. Canivet a parlé, à la Société Nationale des Professeurs de Français en Angleterre, de "l'Ilot du Grand-Bé," ou plutôt de Chateaubriand. M. B. Minssen était au fauteuil. En quelques mots aimables il présente le conférencier. Celui-ci fait une rapide description du Grand-Bé, situé au large de Saint-Malo, en vue des récifs de Cézembre où se perdit corps et biens l'an dernier le steamer "Hilda," de la London & South-Western Company. C'est sur cet îlot, amas de granits confusément groupés, que repose, à l'ombre d'une lourde dalle et d'une croix taillées dans les rochers de la grève, le plus grand génie littéraire du XIXe siècle et le plus illustre des enfants de la Bretagne : François-René de Chateaubriand.

Génie étrange, s'il en fut jamais, tout constitué de contrastes, de philosophie et de foi, de tristesse et d'espoir, de découragement et d'enthousiasme, d'humeur voyageuse et de goûts sédentaires, de royalisme traditionnel et d'esprit révolutionnaire, de mépris de la vie et d'ambition de briller parmi les hommes. Quelqu'un a dit de lui : "Rousseau gentilhomme et vicomte." D'autres se sont complu à l'appeler : "Le père du XIXe siècle." Et c'est en effet l'œuvre de Chateaubriand qui a nourri la littérature contemporaine ; il y a cent ans qu'on marche derrière lui, répétant, amplifiant ses thèmes, pillant sa rhétorique, rééditant ses comparaisons et ses métaphores, imitant ses procédés descriptifs, et trouvant dans son vocabulaire pittoresque tous les joyaux de la phraséologie actuelle. Dans sa prose, on l'a souvent répété, se retrouvent les germes de Victor Hugo, de Lamartine, de Flaubert, de Leconte de Lisle, de Pierre Loti et de Zola.

Négligeant l'œuvre pour s'occuper plus particulièrement de la mémoire de Chateaubriand, le conférencier a tressé une gerbe de souvenirs sur la tombe du grand Breton. L'auteur d'*Atala* dort son dernier sommeil auprès de son berceau, parmi les souvenirs de son enfance, au bruit d'une mer agitée comme sa vie. La maison où il naquit, rue des Juifs, à Saint-Malo, existe encore : elle est devenue l'Hôtel de France, et jusqu'aux dernières années le premier touriste venu pouvait dormir dans la chambre où retentirent ses premiers vagissements—cette pièce est aujourd'hui réservée. Le château de Combourg (à quelques kilomètres de Dinan) où s'écoula son enfance, dont les tourelles délabrées et l'abandon général émurent tant Flaubert lorsqu'il s'y rendit en pèlerinage, en 1850, a été tout récemment restauré. On y a installé une précieuse collection d'objets, ayant appartenus à l'écrivain. La principale curiosité du château reste toujours la chambre, petite et noire, du vieux donjon du More où il dormait, enfant, et dans laquelle ont été réunis divers meubles de son hôtel de la rue du Bac, à Paris : le bureau où il travailla aux pages des *Mémoires d'outre-tombe*, le fauteuil où il s'accoudait aux heures de son inguérissable ennui, son crucifix, enfin le lit de fer garni de rideaux de calicot blancs où il rendit le dernier soupir. Le domaine de Combourg, confisqué et vendu sous la Convention, ne fut jamais la propriété de Chateaubriand ; aussi, pour s'éviter la vue de son patrimoine en des mains étrangères, resta-t-il cinquante années sans rentrer dans son pays natal. Dix-sept ans avant sa mort, il avait pris toutes ses dispositions pour que son corps reposât sur l'Ilot du Grand-Bé : le musée Carnavalet, à Paris, possède la lettre qu'il adressa au maire de Saint-Malo en 1831 et dans laquelle il demandait une tombe solitaire, sans inscription, "ni nom, ni date."

Il mourut à Paris, en 1848, dans son hôtel de la rue du Bac. Il occupa plusieurs logements dans la capitale, entre autres l'hermitage de la Vallée-aux-Loups, avant ses ambassades à Berlin et à Londres, puis l'Infirmerie Marie-Thérèse après son ambassade à Rome et sa rupture bruyante avec la vie officielle. Un souvenir piquant se rattache à son séjour dans cet établissement religieux, fondé dans les premières années de la Restauration par Mme de Chateaubriand. L'auteur du *Génie du Christianisme,* privé de presque toutes ses ressources, recevait là un asile à la fois avantageux et honorable. La communauté s'était annexée une fabrique de chocolat, et la supérieure, femme économe et industrieuse, n'imagina rien moins que cette prime extraordinaire, invraisemblable, digne de Barnum : *montrer* Chateaubriand à tout acheteur d'un paquet de douze livres de chocolat ! L'histoire ajoute que la mode s'établit dans le monde de ne plus se fournir que chez les religieuses de l'Infirmerie, et Chateaubriand lui-même conte l'anecdote en écrivant que "la sainte femme dérobait aussi des trognons de plume dans l'encrier de Mme de Chateaubriand pour les négocier parmi les royalistes de pure race, affirmant que ces trognons précieux avaient écrit le superbe *Mémoire sur la Captivité de la Duchesse de Berry...*"

Entre les péripéties de cette vie aventureuse et tourmentée, celles ayant trait aux amitiés et faiblesses de cœur du grand homme devaient naturellement occuper le premier plan. L'histoire de son mariage, puis de sa terreur de la Révolution et de la guillotine, sa fuite à l'étranger, son service à l'armée des princes, son passage en Angleterre, ses misères et ses luttes à Londres, son ébauche de roman avec la gracieuse Charlotte Ives, son retour à Paris dans l'auréole d'une célébrité naissante, ses amours avec la comtesse Pauline de Beaumont, la maladie, le voyage à Rome et la mort touchante de cette dernière sont autant de petits drames qui forment les sujets d'autant de livres documentés et curieux, de même que l'histoire de ses amours avec la vaporeuse marquise de Custines et celle de ses intrigues avec

Mme de Mouchy, Mme de Staël, dix autres femmes aussi notoires, enfin la relation quasi édifiante de son affection de vingt années pour Mme Récamier, la belle des belles, l'ineffable et douce Juliette.

C'est surtout dans l'intimité du petit appartement que Mme Récamier, ruinée et déjà vieille, occupait au troisième étage du couvent de l'Abbaye-aux-Bois, que Chateaubriand apparaît dans toute la séduction de son physique mélancolique, de son génie quelque peu hautain et de son caractère noble, délicat, prêt à tous les sacrifices en faveur des personnes aimées. Sainte-Beuve dit que Mme Récamier "ne tint jamais une plus grande place dans la société que lorsqu'elle était dans cette humble demeure à l'une des extrémités de Paris," tenant attachée, par des chaînes d'or, toute une foule d'adorateurs aux pieds de Chateaubriand, "sa statue." Celui-ci avait alors soixante ans. Dans cet appartement, ouvert sur un jardin peuplé d'oiseaux et de nonnes blanches et d'espiègles écolières, meublé seulement de quelques sièges, d'un piano et d'une bibliothèque, avec, pour seuls décors, des pots de fleurs aux fenêtres, un portrait de Mme de Staël et une vue de Coppet aux murs, le dieu était plaisant, souriant, charmeur, se dépouillant volontiers de la mélancolie dont il se tenait enveloppé ailleurs. Cette amitié dura vingt ans, avons-nous dit, Chateaubriand venant chaque après-midi à pied visiter son amie, une voiture l'amenant à la porte quand ses jambes s'alourdirent de grand âge, les domestiques de l'Abbaye le portant au haut de l'escalier le jour où la paralysie l'empêcha de se traîner lui-même de sa voiture à la porte de l'appartement, et Mme Récamier lui fermant finalement les yeux avant de le suivre elle-même dans la mort à moins d'une année de distance.

Bien d'autres souvenirs mériteraient d'être rappelés, mais nous renvoyons les curieux aux "Mémoires d'outre-tombe" et aux ouvrages suivants: "Chateaubriand et son Groupe littéraire" (Sainte-Beuve); "Mme Récamier" (Edouard Herriot); "La Comtesse de Beaumont" (Bardoux); "Chateaubriand et Mme de Custines" (Chédieu de Robeton); "Mme de Chateaubriand" (Abbé Pailhès); "Chateaubriand" (Emile Faguet); "Mémoires de la Comtesse de Boigne"; "Silhouettes et Portraits" (Paul Bourget); et diverses études d'Anatole France, Gaston Deschamps, Henri de Régnier, Gustave Lanson, etc.

WHAT TO DO WITH OUR BOYS AND GIRLS.

EMPLOYMENT BUREAUS AT THE SCHOOLS.

The Representative Managers of London County Council Elementary Schools have adopted the following report on the provision of Employment Bureaus in the schools for young persons up to sixteen years of age:—

Object.—The Representative Managers have been deeply concerned to see the wastage of our educational efforts, and the demoralization of many thousands of our young people, owing to the absence of any authoritative assistance and advice at the critical point of their lives when they leave school. Many cannot find permanent employment, many drift into most unsuitable employments. There is a ready market at good wages for the youth of both sexes between fourteen and eighteen, but in occupations which leave them stranded at the latter age without any permanent employment, without a trade or profession, and thoroughly demoralized and spoilt as citizens. Neither the parents nor even the scholars themselves are really acquainted with their own capacity or special talent, and they have few means of discovering the proper opening for a permanent career. They are under great temptation to accept good wages in an immediate engagement without regard to its future prospect. We know it is the desire of managers and teachers to do all they can to help parents in placing their children in suitable employment; and many managers and teachers perform this service most satisfactorily; but even these often feel the need for the services of a wider organization to which cases could be referred. We feel that, at little or no expense, a system could be organized which would bridge the gulf. Some special attention is paid to the abnormally defective child; and the abnormally clever is generally well looked after; but the neglected problem is in 70,000 or 80,000 ordinary children of average ability who leave school every year, drift into the first casual employment that is offered, and return on our hands at thirty-five or forty as "unemployed and unemployable," without a trade and without either the mental or physical stamina for real profitable work.

We think that the London County Council might organize and assist the many devoted efforts which are being made to cope with this problem by giving some official status and possibly small financial support. The objects to be aimed at are:—

1. To secure for boys and girls of ordinary intelligence positions in good firms, where the prospect of continuity of employment is good.

2. To secure for boys and girls of first-rate ability apprenticeship in suitable trades or professions, and the full advantage of technical scholarships or training in a trade school.

3. To establish friendly relations with employers, and to direct the stream of children from elementary schools to those who can be counted upon to deal fairly with them. Any new organization could exercise a powerful influence restricting the employment of child labour, and preventing sweating and such industries as are demoralizing, and could induce employers to give their young employees a fair chance of getting an industrial education.

Scheme.—(1) That in every borough or similar area an Association be formed of managers, teachers (should they desire to co-operate), employers, and other leading local men and women, who shall make themselves acquainted with local industrial conditions and with the terms on which employers in the locality take boys or girls, and the prospects held out, the vacancies which may occur, the stability of firms selected, and the probable future of the particular industry. (2) That where, however, a satisfactory skilled employment committee exists, no such Association will be necessary. (3) That for every group of schools be formed a Children's Committee, consisting of managers (and perhaps others interested in the children), whose business it would be to make themselves acquainted with the children leaving school, their home conditions, and their intellectual and physical capacities. It would be desirable that each Children's Committee be represented on the Association. (4) That it should be the duty of the Children's Committee to refer the young persons to the Association; as, covering a wider area, the Association would be in a better position to decide on the industrial question. (5) The London County Council should appoint for each Association a competent Secretary, not necessarily a Manager, who should have the knowledge of industrial conditions needed to test the information, visit firms, and advise boys and girls. The Secretary should not send children to any work till he has satisfied himself as to the conditions of labour and the future prospects. The majority of the Committee think that it would in most cases be necessary for the London County Council to pay a salary to the Secretary for each Association; for a person of good standing should be secured and one able to give practically his whole time to the work. The minority think that a volunteer secretary appointed by the Association would be more satisfactory. In any case the scheme must have the Council's moral support. (6) Firms should receive circulars periodically, giving the objects of the Associations and the addresses of the Secretaries.

Remarks.—(1) In this Memorandum the expression "Association" invariably refers to the Borough organization, and the expression "Children's Committee" to that for the group of schools. (2) Teachers of day and evening schools should be cordially welcome on either body; but no work should be expected of them other than the preparation of lists of all boys and girls leaving school and needing work. The idea would be to have a register kept which would be a continuation of the existing "schedules" of the school attendance officers, maintaining some record of each old scholar up to sixteen years of age. (3) Co-operation is desirable between the Associations and (*a*) any Apprenticeship and Skilled Employment Committees (with whom they will exchange information), and (*b*) any well-conducted labour exchange already in existence. (4) The Associations should not themselves collect or manage apprenticing funds, but co-operate with existing agencies. (5) This scheme need not prevent employers of good repute obtaining boys and girls direct from head teachers, as at present occurs in many instances.

Among the most important and interesting features of the forthcoming Franco-British Exhibition in London next spring will be the Education Section, concerning which Mr. G. R. B. Loch, the organizing secretary, says that the likeness and the difference between the English educational methods and the French will be illustrated in parallel. The Hon. President of the British Section is Mr. Reginald M'Kenna, President of the Board of Education, and the Vice-President, Mr. John Sinclair, Secretary for Scotland. Among the members of the Executive Committee are Sir William Mather, Prof. M. E. Sadler, Sir Edwin Cornwall, and Sir Edward H. Busk, Vice-Chancellor of the University of London.

REVIEWS.

THE EARLIER STUARTS.

The Political History of England. Vol. VII.: *From the Accession of James I. to the Restoration* (1603–1660). By F. C. Montague, M.A., Astor Professor of History in University College, London. (7s. 6d. net. Longmans.)

This is one of the best, if not the very best, of the excellent series, so far as it has appeared. The material is lucidly disposed and handled with easy mastery; the judgment of men and of events is independently framed and calmly balanced, and the style is good and even. Prof. Montague has not only studied deeply and comprehensively the facts of his period, but also brings to bear upon them a mind trained in the weighing of evidence and a wide literary culture. The work is a very fine performance, both as history and as literature.

Even the dull annals of the reign of James I. are invested with unexpected interest. True, there are plots and intrigues at home, colonial enterprises, and foreign complications; but it is difficult to raise the general story to the heroic plane, and the effect must be obtained by a pointed treatment of the several episodes and by welding these firmly into the chain of events. We note with satisfaction that Prof. Montague deals faithfully with Bacon—with the "affectionate ingenuity" that has been spent "in proving on Bacon's behalf what none would have attempted to prove for a less distinguished offender." His argument is independent, plain, and convincing. Moreover, he takes care to mark the constitutional, as well as the personal, bearings of the condemnation of Bacon. The summary of the character and reign of James also shows dispassionate consideration and comprehensiveness of view; and we may at once say that this characteristic is illustrated on all occasions throughout the volume.

The reign of Charles I. is introduced by a careful and unbiased estimate of the new monarch, which is most useful as a basis for estimating the future developments; and at the beginning of the Civil Wars a review of the composition and the resources of the hostile parties similarly puts the reader in position to understand clearly the ensuing events. Such devices of disposition are recognized to be quite natural; but they are so often neglected that their presence becomes a positive virtue of the historian. Prof. Montague traces firmly the fatally perverse career of Charles, with and without a Parliament, and condenses into three pointed and vigorous chapters the vicissitudes of the long struggle in the field. His judgment on Charles is this:

Those who judge Charles with candour will not doubt that he was sincere in his political and religious opinions. From infancy he had been taught that prerogative cannot be restrained by law, and that a king should make his subjects conform to the true Church. Peaceable remonstrance, armed opposition, defeat and disaster, a prison, and the approach of death could not modify these convictions. . . . Had Charles been restored to the Throne, it is probable, apart from the lassitude of advancing years, that he would have followed once more the course that led to his downfall. Too much in earnest for frank submission to circumstances and too untrustworthy for any compact to bind, he exasperated enemies who had begun with showing forbearance until they would be content only with his death. That his trial and execution were illegal needs no proof, and that they shocked nine-tenths of his subjects is certain. . . . Yet, if we allow for the passions of the time and the provocation which Charles had given, we shall readily understand how honest men might deem themselves bound to exact the uttermost penalty, and, by an awful precedent, establish what lawyers and theologians had so long denied—that kings are responsible to their subjects.

The history of the Protectorate is set forth with like perspicuity and force, the narrative being maintained at a high level throughout. The character of Cromwell is sufficiently complex and provocative to tempt to strong and partial conclusions, against which, however, Prof. Montague is steadily on guard. We quote a few points of his estimate:

At the present day it should be possible to judge Cromwell with equity. No reasonable man now believes that he was a conscious hypocrite or a downright self-seeker. None will now deny that religious conviction gave the original impulse to his whole career. To him, as to so many other Puritans, the form which Charles and Laud strove to impress on the Church of England was thoroughly unedifying and unscriptural—a hindrance, not a help, to the Christian life, and a means of leading the people back into errors which they deemed pernicious. As they were not allowed to remain outside the Laudian system, they resolved on its destruction. At the same time they resented the steady encroachment of the Crown on the liberties of the subject, and, naturally, took the side of a Puritan House of Commons against an Arminian King. When the King had been overthrown, Cromwell and his friends found that the majority of their own Puritan brethren grudged them that spiritual freedom which they had done so much to conquer. They quelled the Presbyterians also; but they could keep the fruits of their second victory only by remaining masters of the three kingdoms. . . . In grasping supreme power, Cromwell might honestly believe that he was doing the greatest possible service to "the people of God," to Puritan England; that he was averting anarchy and preparing a reconciliation of parties. So far as we can judge, he was not a man of miraculous foresight. Circumstances moulded his conduct; each step led to the next, and his saying that no man rises so high as he who knows not whither he is going was best exemplified in his own elevation. . . . A great part of the nation must have always regarded him as a tyrant; yet those who judge him with due allowance for the standard of the age will not think Cromwell naturally cruel or vindictive. Even Clarendon expressly owns that he was not a man of blood. . . . The unwilling praise of foes like Clarendon is proof of Cromwell's greatness as a ruler. . . . Although he failed to quell the national instincts of the Scots and of the Irish, he effected the first complete union of the three kingdoms. He gave a precedent of religious toleration which, however imperfect, went far beyond anything yet known in England. He sought to effect improvements in the law, which, after his death, were postponed for nearly two centuries. . . . He showed his regard for letters by the favour which he extended to Hobbes, Cowley, and Cleveland, all of them political adversaries. His administration might be costly, but it was not wasteful, and under him all the public services were wound up to the highest pitch of strenuous performance. Whatever exception may be taken to some parts of his foreign policy on grounds of wisdom or of justice, it bore the stamp of large ideas and daring ambitions.

The volume ends with the Restoration. There is a critical appendix on the authorities for the period, which will be very serviceable; and the index, as usual, is full. The work may be somewhat large for a text-book, but at least it should be accessible in the secondary school library.

GERMAN HIGHER SCHOOLS.

(1) *Handbuch für Lehrer Höherer Schulen.* By twenty writers. Edited by Stadtrat Dr. Julius Ziehen, Frankfort-am-Main. (M. 13.) (2) *Das Höhere Lehramt in Deutschland und Oesterreich,* von H. Morsch: *Ergänzungsband.* (M. 5.) (Teubner.)

(1) If this imposing volume is considered necessary for the enlightenment of German teachers in higher schools, one may confidently anticipate that it will furnish a vast amount of information to non-German students of education. It is planned on a generous scale, and the different subjects have been treated by specialists in each department, while Dr. Ziehen has coordinated their efforts from the general standpoint. The German system, like some other systems, lacks unity: "weder die Lehrpläne noch die Lehrziele der verschiedenen Einzelstaaten stimmen in allen Punkten überein." Whether this be an advantage or a disadvantage, it certainly complicates the exposition; but the difficulty is squarely met by simply stating the salient facts of each of the important varieties. It is well to be reasonably comprehensive. A similar breadth of view leads the contributors to present the historical development of their respective subjects, so that we see not only the existing state of facts, but also the processes whereby the present grew out of the past. The importance of such a treatment is obvious: as we have before insisted, knowledge of the facts, past as well as present—knowledge of the history as well as of the existing details—is a preservative against wasteful trials of exploded methods, and the only firm basis of hopeful speculation. "Es gibt gegen den Schulkrieg," says Dr. Ziehen, "kein besseres Mittel als Vermehrung der wirklich Sachverständigen; denn in der Mehrzahl der Fälle ist es der Mangel ausreichender Sachkenntnis, der die Gegensätze der Schularten und der Richtungen der Unterrichtsmethodik über Gebühr sich steigern und der die Polemik bitter und unfruchtbar werden lässt."

Dr. Ziehen leads off with a full and careful explanation of "der innere Organismus des höheren Schulwesens"—the relation of the higher school to the *Volksschule*, the scope and distribution of the subjects, the three great types of Higher School (*Gymnasium*, *Oberrealschule*, and *Realgymnasium*), the struggle against the *Gymnasialmonopol* and its grounds, &c. Prof. Julius Nelson then takes in hand "die äussere Organisation" of the system—commissions, boards, conferences, Lehrer

and Oberlehrer, pay and pensions, discipline and punishments, school associations, &c. Prof. Fricke deals with "der Oberlehrerstand," tracing its historical development and describing its present position, which is far from satisfactory to the Oberlehrer. Then the different subjects of study are specially treated in separate chapters by distinguished Professors, Rectors, and Oberlehrer. The question, or rather the questions, of modern language teaching, are very fully handled by Profs. Boerner and Stiehler. The literature of every subject is amply chronicled in footnotes, and generally also in lists appended to the several chapters. An extremely comprehensive and instructive volume.

(2) The main work (to which the present considerable supplement is now added) by Prof. Morsch, Oberlehrer am Königl. Kaiser Wilhelms Realgymnasium zu Berlin, is described in the sub-title as "ein Beitrag zur vergleichenden Schulgeschichte und zur Schulreform." It was published just two years ago, in the autumn of 1905. The "Ergänzungsband" is intended not only to extend the scope of the original book by a treatment of collateral matters omitted or but briefly handled, but also "die amtliche Stellung der Oberlehrer zu festigen und zu erweitern." The preface is a sharply critical argument "über innere und äussere Unabhängigkeit des höheren Lehrerstandes." The several chapters deal with (1) Vorschule und Aufnahmeprüfung, (2) Entfernung unbefähigter und ungeeigneter Schüler, (3) Wechsel- oder Parallelcöten? (4) Schulordnungen, (5) Füllung der höheren Schulen in Deutschland und Oesterreich, and (6) Ferien, while an extensive "Anhang" is concerned with pay and pensions. The fifth chapter is stiffly statistical, showing the overcrowding of schools and of classes. "In der Tat, die Ueberfullung der Klassen hat recht unheilvolle Wirkungen." "All die schönen Worte von Besserung und Hebung der höheren Schule, von Verwirklichung einer Individualpädagogik, von der Pflege einer Schulhygiene müssen eben Worte bleiben, so lange man nicht die nötigen Gelder flüssig macht, um die überfüllten Schulen und Klassen zu teilen. 'Fängt hier die Schulreform an,' könnte man sagen." But then "wir ein so armes Land sind," as Adolf Matthias says; and so "wird es noch lange währen, bis man für unsere höheren Schulen so viel Geld erübrigt wie für militärische Dinge." We do not know how far this futile German demand for more money for education will assuage the bitterness of our own educationists similarly crying in the wilderness.

Alternating Currents.

A Treatise on the Theory of Alternating Currents. By Alexander Russell, M.A., M.I.E.E. Vol. II. (12s. net. Cambridge University Press.)

Mr. Russell's treatise furnishes a very valuable exposition of the theory of alternating electric currents, and of the apparatus that have been evolved in their practical utilization by the electrical engineer. The alternating current is now so extensively used for lighting and transmission of power that no practical electrical engineer can hope to solve the many problems which will be presented to him without a very complete knowledge of its theory; and this theory is by no means a simple matter to understand—it requires a considerable mathematical equipment. The applications of alternating currents in practice have given rise to many new developments of the comparatively simple first principles of the theory. But Mr. Russell's volumes will, we think, satisfy the utmost demands of the electrical engineer for some time to come.

The first volume (which we noticed very favourably in June, 1905) dealt mainly with inductance and capacity. Chapter v. gave illustrations of methods by means of which the capacities of polyphase cables and overhead wires can be calculated; chapter vi. explained the power factor; and chapter xiii. stated the theory of phase indicators and induction type watt-power meters. The second volume deals with the theory of the working of alternating current apparatus. The important subjects of armature reaction and phase swinging (among others) are clearly and exhaustively explained. In the first two chapters the theory of single and polyphase alternators is set forth. Armagnat's experimental methods of analyzing E.M.F. waves is given in chapter iii., and the theory of synchronous motors is developed in chapters iv. and v. The theory of the alternating current transformer is set forth at length. Core and shell transformers, floating coil transformers, polyphase transformers, and other varieties are described and explained. We can confidently recommend Mr. Russell's work to engineers and teachers that desire to become acquainted with the latest developments of alternating current theory and their applications in practice.

GENERAL NOTICES.

CLASSICS.

Paralipomena Sophoclea: Supplementary Notes on the Text and Interpretation of Sophocles. By Lewis Campbell, M.A., Hon. D.Litt-Oxon., Hon. LL.D. Glas., Emeritus Professor of Greek in the University of St. Andrews, &c. (6s. net. Rivingtons.)

Dr. Campbell goes over the whole of the plays of Sophocles, placing on record his "matured opinion on disputed points in the text and interpretation" of the poet. While a considerable portion of Jebb's commentary "coincides with, and so corroborates," the views put forward in Dr. Campbell's edition (1871–81), "I find, on reconsidering both," says the author, "that, while I stand corrected in several places, there are others in which I adhere to my former view, and some also where I am now disposed to differ from both judgments." The stress is laid, not on the agreements, but on the disagreements, of the two eminent scholars. "The points here discussed are (1) those in which I now agree with Sir Richard Jebb against my former opinion; (2) those in which I adhere to the view expressed in my edition; and (3) the comparatively few places where, on further consideration, I have come to conclusions differing more or less both from his commentary and from my own." Incidentally, of course, views of other notable Sophoclean commentators and critics are freely adduced and considered. This record of the mature results of a learned and assiduous scholar should be in the hands of all students of the plays. The frank and generous treatment of points of difference is an admirable example of magnanimous combat: the age of chivalry is not yet quite gone.

Aeschylus in English Verse. Part II., "Prometheus Bound" and "The Suppliant Maidens." By Arthur S. Way, M.A. (3s. 6d. net. Macmillan.)

Mr. Way continues to maintain his reputation for scholarship and for deft presentation in English of the difficult original works. The blank verse is vigorous and varied, and the choruses are manipulated with remarkable dexterity and effect. The translation, while interesting scholars, will prove a great boon to readers that are unable to cope with the Greek.

MATHEMATICS.

The Rational Arithmetic. By George Ricks, B.Sc. Lond. (Scholar's Books, 3d. each year; Teacher's Books, 8d. each year. Macmillan.)

A seven years' course in arithmetic arranged for primary schools and endorsing in all essentials the principles advocated in the "Suggestions" issued by the Board of Education in 1905 and those embodied in the Code of 1906. Mr. Ricks has had the experience of more than a quarter of a century as an Inspector of Schools, and, as might naturally be anticipated, his practical knowledge of the comparative value of various methods of teaching has influenced in a marked degree the present series of small text-books. The teacher's volumes are full of valuable suggestions. Practical demonstration plays an important part in the earlier years, and the necessary equipment of the school is neither elaborate nor costly. The scholar's books contain the exercises only, unaccompanied by the answers, which are given in the teacher's series. In the latter the results appear to be generally accurate. The diagrams are clear. Occasionally misprints are noticeable, and examples of the awkward effect produced by numerals and letters placed unnaturally are not wanting. Some of the definitions, too, are capable of improvement.

Elementary Algebra. Part I. By P. Ross, M.A., B.Sc. (3s. Longmans.)

Compiled with much thought and care, Mr. Ross's work gives a useful treatment of the subject, Part I. containing the elementary theory and materials for practice up to and inclusive of quadratic equations and problems involving them. The recommendations of the Mathematical Association have had due weight with the writer. The text may for the most part be followed without difficulty by the class of student whose requirements have been directly considered. The work is a protest on the part of the author against those modern text-books which consist almost entirely of model examples and of exercises to be worked on similar lines. Sweeping condemnation is rarely accompanied by strict justice, and in the present case, whilst as regards the self-educating student the author is clearly right in his contention that such works as he opposes are utterly useless, he overlooks, on the other hand, their value as tools (perhaps even then not the best possible) in the classroom where adequate instruction in principles is well and vividly imparted by word of mouth.

Elementary Solid Geometry. By W. H. Jackson, M.A. (2s. 6d. Edward Arnold.)

The course is suitable for advanced school and intermediate college work, and is planned on sound principles and useful lines. In order, however, to use it with thorough profit to themselves, students will stand in need of careful expert preparation and help; otherwise it is to be feared that some portions of the text will present considerable difficulty to the average mind. The volume is very fully illustrated.

A number of the diagrams convey with great success the idea of the solid figures represented; others, on the contrary (principally in the course of the earlier pages) weary the reader with the effort to trace their full significance. The work has the advantage of including a brief but valuable preface from the pen of Prof. Horace Lamb.

SCIENCE.

Applied Electricity: a Text-book of Electrical Engineering for Second Year Students. By J. Paley Yorke, Head of the Physics and Electrical Engineering Department at the L.C.C. School of Marine Engineering, Poplar. (7s. 6d. Edward Arnold.)

Mr. Yorke intends this book to be a connecting link between the elementary stages of magnetism and electricity and the study of specialized works on particular branches, such as electrical machine design and alternate current work. Assuming a first year's course of a substantial nature, he describes the fundamental principles of applied magnetism and electricity and shows how the practical applications are related to the purely scientific aspects; indeed, he tries to fuse, as far as may be, the pure and the applied aspects. The measurement of current strength, of electromotive force, and of resistance, heating effect and its applications (lamps), electric installation and power distribution, the application of magnetism to dynamos, motors, alternators, and transformers—these, together with allied and supporting subjects, are handled with great ability and judicious presentation. As opportunity offers, laboratory experiments are described in some detail; 100 questions are appended; and there are 153 figures.

A First Course in Physics. By Robert Andrews Millikan, Ph.D., Assistant Professor of Physics, and Henry Gordon Gale, Ph.D., Instructor in Physics, in the University of Chicago. (7s. 6d. Ginn.)

This is a very comprehensive and elaborate exposition of the principles of force and motion, pressure in water and air, molecular motions and forces (properties of matter), work, heat, magnetism, electricity, sound, light, &c. The treatment is practical and lucid, and the interest is heightened by biographical, historical, and social references. Questions and problems are liberally and thoughtfully supplied at the end of each subdivision of a chapter. There are 16 full-page portraits of great physicists, and close upon 500 illustrations in the text. The work is well considered and laboriously and efficiently executed.

ENGLISH LITERATURE.

(1) *How to read English Literature.* By Laurie Magnus, M.A. Part I. Chaucer to Milton. Part II.: Dryden to Meredith. (2s. 6d. each. School Edition, 1s. 6d. each; or, both Parts in one volume, 2s. 6d.). (2) *Documents illustrating Elizabethan Poetry.* By Sir Philip Sidney, George Puttenham, and William Webbe. Edited by Laurie Magnus, M.A. (2s. 6d. Routledge. The English Library.)

(1) Mr. Magnus offers what he intends "as an introductory course to the study of English literature." Following the recommendations of Memoranda of the Board of Education on the teaching of the subject in secondary schools and training colleges, he aims "to set the history of English letters in a definite relation to its environment, and to lead the reader to view the development of his nation's literature as an inseparable part of its expansion and growth." Though he stumbles at the start over an exploded political maxim that he uses as an illustration, he handles his theme with much knowledge of detail, as well as with a shrewd general outlook on the streams of influence, and he holds the reader's interest by a capable and agreeable presentation of his views of the literary development of his periods in relation to the historical evolution. The work appeals to the general reader as much as to the student of the schools. (2) The "Documents" are three notable Elizabethan discourses on the art of poetry, reprinted (with certain omissions and a little rearrangement) from Prof. Arber's texts, and modernized in spelling. Mr. Magnus supplies a substantial and serviceable introduction.

Epochs of English Literature. By J. C. Stobart, M.A., Assistant Master in Merchant Taylors' School. Nine volumes. (1s. 6d. each. Edward Arnold.)

Each volume contains from twenty to thirty representative extracts from writers of an epoch named after the principal author of the time: Chaucer, Spenser, Shakespeare, Milton, Dryden, Pope, Johnson, Wordsworth, Tennyson. Mr. Stobart furnishes substantial and discriminating introductions, full and capable notes, and (where necessary or advisable) a glossarial index. The separate exemplification of each epoch will be very convenient for students. The whole series has been worked out very competently, and the get-up is excellent.

Short Studies in English Literature. (6d. each. Nelson.)

The first issue consists of a dozen volumes, about 100 pages each, containing selections from the best authors, with a few pages of appendix, biographical, slightly critical, and pointing the student to further sources of information. The size is very handy ($6\frac{1}{2}$ in. × $4\frac{1}{4}$). The type is good and well spaced; each volume has a frontispiece; the get-up (in cloth boards) is tasteful; and the price is remarkably moderate. We have (1) *Selections from Tennyson's Poems*; (2) *Comedies from Lamb's Tales*; (3) *An Introduction to Shakespeare's Comedies*—extracts from various plays to be used in conjunction with (2) by way of illustration; (4) *The Great Stone Face*, &c.—6 short stories from Hawthorne; (5) *Pen Portraits from Carlyle*—16 in number; (6) *Sleepy Hollow*, &c.—4 short stories from Hawthorne; (7) *Longfellow's Evangeline*; (8) *Wordsworth's Shorter Poems*; (9) *Pen Pictures from Macaulay*—8 descriptive and narrative passages; (10) *The Hero as Divinity* (Carlyle) and *Balder Dead* (Matthew Arnold); (11) *Tragedies from Lamb's Tales* (with Hazlitt's essay on Macbeth); (12) *Introduction to Shakespeare's Tragedies*—extracts from "Lear," "Macbeth," "Romeo and Juliet," and "Hamlet," to be read in conjunction with (11) by way of illustration. An excellent series, well suited to the requirements of the Board of Education in English literature for secondary schools.

ENGLISH READERS.

Blackie's Model Readers form an excellent progressive series of lessons, largely fresh and always interesting, with abundance of illustrations, many of them in colours. Appended are notes on reading aloud (illustrated by phonetics), songs (with music), lists of difficult words in the lessons, exercises on composition and word-building, &c., suited in each volume to the particular stage of the pupil. A very attractive and agreeable series.

Oliver & Boyd's Excelsior Readers are very similar. The lessons furnish good and varied matter, graduated in difficulty and in suitability of interest, and liberally illustrated, colours being more frequent in the earlier books. In like manner, too, there are appendixes of difficult words, exercises in English (very properly connected with the reading lessons), simple aids to good reading, &c. Also a very attractive and agreeable series.

Macmillan's New Globe Readers, the introductory books of which we noticed favourably some time back, are graduated at first with much attention to the constitution and form of syllables, and then mainly according to the matter, which is considerably varied and always interesting. In the Fourth and later Books some notes are appended; and in the Fourth and Fifth Books also a vocabulary of the more difficult words in the extracts. The volumes are amply illustrated, handy in form, and nicely got up.

The York Readers, published by Messrs. George Bell & Sons, contain a considerable infusion of instructive matter, as well as prose and poetry of the usual literary or fictional character. The series is carefully graduated. Appended are drawing examples, "given as exercises in drawing from memory," though one hardly sees the connexion with reading exercises; and, what is more to the purpose, composition exercises, "intended as inducements to children to notice what they read and to encourage them to record their own impressions." The type is large and pleasant, the illustrations (many of them coloured) are abundant and attractive, and the whole get-up is liberal and agreeable. It will be a pleasure to learn to read from these books.

The Fourth Book of *The Jack Readers*, by Thomas Cartwright, B.A., B.Sc. Lond. (1s. 4d.), presents varied and interesting lessons, with appendix of verse and prose to be learnt by heart, English exercises, and lists of difficult words arranged on somewhat new lines. The black type on toned paper has an excellent effect. The illustrations, many of them in colours, are numerous and good.

Primers I. and II. of *The Nation Series* (4d. and 5d., R.T.S.) offer systematic readings illustrating the combinations of vowels and consonants, with plentiful and good illustrations in colours. Type, paper, and get-up are most liberal. The series promises to be very attractive.

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HISTORY.

An Introduction to the History of Modern Europe. By Archibald Weir, M.A. (6s. Methuen.)

On the title page Mr. Weir is stated to be the author of "The Historical Basis of Modern Europe,'" and on the reverse side the present work is stated to be "first published in 1907." But the present work is, in all essentials, the same as the work entitled "The Historical Basis of Modern Europe": in three cases, two consecutive chapters have been run into one; headings have been supplied to the paragraphs; sentences and paragraphs have been cut out here, and other sentences have been introduced there: but the present work is neither more nor less than a thoroughly revised edition of the volume that we have known for some twenty years. In its present form, to be sure, the book is "first published in 1907," but its history should have been indicated quite frankly. The fact is that Mr. Weir's survey is most meritorious, careful, and instructive, based on ample knowledge, patiently thought out, and agreeably written. We doubt whether it has been adequately appreciated: if it were placed in school libraries, it would be read with avidity apart from examinational considerations; and it ought to have a wide popular circulation. A judiciously selected bibliography is furnished, and there is a useful index. The volume is

well printed and attractively got up. We give it a very warm welcome on the merits.

A Sketch of Scottish Industrial and Social History in the Eighteenth and Ninetcenth Centuries. By Amelia Hutchison Stirling, M.A. Edin., formerly Examiner in History in the University of St. Andrews. (6s. net. Blackie.)

Though but a brief sketch, the work breaks new ground, and deals with matters that ought to be studied in connexion with the ordinary history book of the period: commercial enterprises, industrial inventions, fresh manufactures, books written, pictures painted, charitablo institutions founded, roads and bridges built, the modes of life of the people. The record is certainly most highly creditable to Scotland, and England has shared many of the results. The materials are largely drawn from contemporary authorities; and they are worked into a systcmatic and lucid narrative, which is deeply interestiug and most suggestive. There are 8 plates—portraits.

HYGIENE.

The Health of the School Child. By W. Leslie Mackenzie, M.A., M.D. D.P.H., &c., Medical Member of the Local Government Board for Scotland. (2s. 6d. Methuen.)

Dr. Leslie Mackenzie here offers a reprint of half a dozen papers "as a contribution to the practical side of the medical inspection of schools"—a subject in which, he justly says, the public interest is widespread and intense. The first three papers deal with the hygiene of school life, normal growth in the school ages, and medical examination and supervision of schools and school children; the next exhibits in some detail the methods followed in Wiesbaden and Nüremberg; and the remaining two "Notes" illustrate further aspects of German practice. It is unnecessary to say that the work is thoroughly capable and practical. It is popular in form and agreeable in style. "If we force the child to school," says Dr. Leslie Mackenzie, "we have no right to force him to read with defective eyes or to expect him to hear with defective ears. I have never met a single parent that disputes this proposition." He wants inspection of the school child, "not for infectious diseases alone, but for all diseases and conditions that in any degree unfit him for school life"; and he shows how this object can be practically realized without difficulty.

A Text-Book of the Principles of Hygiene, based on Physiology. By A. Watt Smyth. (6s. Simpkin, Marshall, & Co.)

Mr. Watt Smyth brings into scientific relation the fundamental principles of physiology and their practical applications in hygiene "for the use of school teachers." A reasoued knowledge of these subjects, he says, will be of threefold use to the teacher: "(1) to guide him in the management of the children under his care; (2) to supply him with the knowledge required to manage his school-room hygienically; (3) to enable him to teach personal and domestic hygiene to the scholars." The exposition is detailed, practical, lucid, and simple, and it is illustrated by 16 plates and 25 diagrams. An extremely competent and useful work.

CHRISTMAS BOOKS.

ROMANCE OF HISTORY.

Rose of Blenheim, by Morice Gerard (6s., Hodder & Stoughton), is a well-knit and forcibly told tale of the times of Marlborough. Early in 1704 the hero is despatched by the Duke on a secret enterprise in Paris—in fact, to find out by hook or by crook the plans of campaign of Louis; for the Duke means to drive a wedge of English and Dutch troops between Paris and Vienna, whither Louis's ambition points. There are dangers and adventures enough in Lord Godfrey Latour's mission; and the Countess Rose von Dellen, "a girl barely past the frontier of that mysterious threshold of womanhood," is a potent factor in the stream of events. The Duke is freely on scene, and the political events of the story conclude with the Battle of Blenheim, which is described with spirit. The story is remarkably well written, and the interest is continuously maintained. There is a portrait frontispiece of the heroine, in colours.

Another entertaining narrative by Morice Gerard is *The Adventures of an Equerry* (3s. 6d., Cassell), which is concerned with incidents in the early life of Marlborough, for the hero was equerry to Colonel Churchill. In point of time, then, it precedes "Rose of Blenheim," and there is this further connexion between the two stories, that Donald Duvain, a vigorous and shrewd Scot who was a useful servant to Lord Godfrey Latour, acts in the present narrative as servant to our equerry: "When my brother-in-law [our equerry, Lesterne] gave up the Army, on his marriage," says Latour, "Duvain asked to be transferred to me." After various adventures in England, we engage in the siege and capture of Maestricht, meeting Louis XIV., Marshal Turenne, Vauban, and other notabilities; enter the betrayed Castle of Essel and witness the reward of the traitor; foregather with the Prince of Orange at Delft; and so forth. With the public incidents are mixed up ingeniously a great variety of private intrigue and adventure; and eventually we return to attend the marriage of Lord Churchill and Mistress Sarah Jennings at Sandridge, near St. Albans. A bright and bustling story, with eight full-page illustrations.

Mr. Walter Wood has got hold of a capital idea, and he has worked it out very efficiently in *Survivors' Tales of Great Events*, which he has "retold from personal narratives" (3s. 6d., Cassell). There are fifteen stories, all military or naval episodes of commanding interest, and many of them of historical importance—such as the Battle of the Alma, the outbreak of the Mutiny in India, Rorke's Drift, the Kabul Massacre, the Charge of the Light Brigade, the Wreck of the "Birkenhead," &c. The stories are all, of course, intensely interesting; but the form necessarily prevents a full historical statement. For example, the sudden and unforeseen character of the Indian Mutiny is overdrawn; and, as usual, the march of Lord Roberts from Kabul to Kandahar, fine as it was, is over-glorified; and both Sir Donald Stewart's previous march the other way—a much finer performance—and Sir Donald's assistance to Lord Roberts at the start are ignored. If the limits of the book be remembered, it will be found alike instructive and inspiring.

Heroes of Pioneering, by Edgar Sanderson, M.A. (5s., Seeley), is an ample record of "true stories of the intrepid bravery and stirring adventures of pioneers with uncivilized man, wild beasts, and the forces of Nature, in all parts of the world." The author tells of the early settlement in Virginia (Raleigh and Captain John Smith), the French dominion in Canada, the founders of New England, the Settlement of Kentucky (Boone the Backwoodsman), Sir Stamford Raffles and Singapore, Rajah Brooke and Borneo, Major Skinner and the civilization of Ceylon, pioneer work in South Australia and New Zealand, Rhodes and Rhodesia, the French occupation of Algeria, General Jacob and Jacobabad, Uganda, Dahomey, and Nigeria. If the praise is sometimes superabundant and indiscriminating, the narrative is clear and simple and full of interest, and youthful readers will not quarrel with the heroic vein. The volume conveys in a very agreeable manner an immense amount of historical information on important themes. Sixteen full-page illustrations and handsome get-up.

Mr. Edward Gilliatt, M.A., sometime master at Harrow School, has found a stirring subject in *The Romance of Modern Sieges* (5s., Seeley)—a spirited description of "the personal adventures, resource, and daring of besiegers and besieged in all parts of the world." He gives, "not histories of sieges, but narratives of such incidents as occur in beleaguered cities and illustrate human nature in some of its strangest moods." "These tales are full, indeed, of all the elements of romance, from the heroism and self-devotion of the brave and the patient suffering of the wounded, to the generosity of mortal foes and the kindliness and humour which gleam even on the battlefield and in the hospital; but the realities of war have not been kept out of sight." Little personal touches are given here and there from talks the writer has had with men that were engaged in some of the incidents described. The book is most interesting throughout, and throws many sidelights upon important historical episodes. Sixteen full-page illustrations.

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Mr. H. W. G. Hyrst describes *Adventures in the Great Forests*—"romantic incidents and perils of travel, sport, and exploration throughout the world" (5s., Seeley). Most of the adventures narrated fall within the century from 1760 to 1860, "the golden age of modern exploration, at least as regards forests"; and there is scarcely a country that is not represented somewhere in the twenty-seven chapters. The variety and freshness of the episodes and circumstances are remarkable, and there is much instruction intermingled with excitement of danger or of discovery. Mr. Hyrst deplores the widespread demolition of the forests: "next to the sea, the forest is the true home of romance; its beauty, its silence, the shelter which it affords to the fugitive or the beast of prey, are full of suggestiveness to the poet, the painter, and the story-writer." Anyhow, he has rescued an immense variety of forest romance, which will be read with keen and sustained interest. Sixteen full-page illustrations and artistic get-up.

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(*Continued on page* 498.)

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Telegraph Dick is a bustling narrative of a London lad's adventures in Africa, from the rapid pen of A. G. Hales, the war correspondent (2s. 6d., Cassell). After some complications in London, Dick goes off to Africa with a companion. There is no lack of adventure where there are sharks or elephants about, to say nothing of apes and ostriches and blacks with assegais, and a great treasure of ivory somewhere. "Most of the things I am chronicling," says the author, "are true." Whether boys as readers concern themselves seriously on the point we should not like to decide; but anyhow the story goes on at a great pace, with plenty of incident. There are eight full-page illustrations.

Romance of Nature and Industry.

Though *Animal Artisans, and other Studies of Birds and Beasts*, by the late C. J. Cornish, M.A., F.Z.S., of St. Paul's School (6s. 6d. net, Longmans), was not issued as a Christmas book, it will serve the purpose remarkably well. The chapters—thirty-six in number—have already appeared, like most of the author's work, in the *Spectator* or in *Country Life*, but they will be fresh to many, if not to most, readers. They are extremely varied in subject, and the treatment is always sincere and interesting, with much original observation and reflection. We learn about mason birds, carpenter birds, road-making animals, landscape gardeners, wild swans and tame cygnets, decoy animals, and so forth; we are led to contemplate animals under very diverse conditions—on the march, as affected by the weather, in time of floods, in danger, and in friendship; and we get glimpses into the working of their minds, their powers of sense, and their moral qualities. It is an extremely entertaining and instructive book. Mrs. Cornish furnishes a prefatory memoir of the lamented author in terms of modest reserve; and there are two portraits from photographs, and twelve drawings by Patten Wilson.

Mr. Charles R. Gibson, who recently charmed us with the wonders of modern electricity, now tells *The Romance of Modern Photography* (5s., Seeley). For this purpose he requires some two dozen chapters, explaining "the discovery of this wonderful art, and the steps by which its range has been extended until it can achieve results which only a few years ago would have been thought impossible." The various processes of photography and its numerous applications—in the illustration of books, in the identification of criminals, in bringing to light "the invisible," &c.—are extremely interesting; and descriptions of successful photographic achievement under difficulties excite the admiration and hold the attention of the reader. Appended is a convenient summary of the successive incidents of greater importance in the history of the invention, with dates and names of the inventors. Sixty-three illustrations.

Mr. Sidney Wright tells *The Romance of the World's Fisheries* (5s., Seeley)—"interesting descriptions of the many and curious methods of fishing in all parts of the world." There is whaling, sealing, turtle-catching, pearl-diving, and so forth, besides the taking of "fish" in the strictly scientific sense; and the author endeavours rather "to give an animated picture of the fisherman's life, of his methods, his hardships and adventures, his disappointments, and his hardly won successes," than to treat the subject from the commercial and industrial point of view. Mr. Wright has the great advantage of being able to draw upon his own experiences as well as upon the records of other people's doings. A most interesting and varied account, with twenty-four full-page illustrations and agreeable get-up.

Tales of Faerie.

Mr. Andrew Lang presents *The Olive Fairy Book* (6s., Longmans)—a member of a large and growing family, all well-favoured and all beloved of the bairns. It consists of some thirty stories, gathered from various quarters, many of them translated and adapted by Mrs. Lang. Children that know the series will welcome it with delight, and those that do not yet know the series cannot do better than start upon the Olive Book. It is all very well for Mr. Lang to say that it is his wish "that children should be allowed to choose their own books: let their friends give them money and turn them loose in the book shops!" He knows well how seductive is the get-up that has been provided for this volume—and for the whole series—by the generosity of his publishers.

Roundling, and other Fairy Tales, by Caroline Southwood Hill (1s. 6d., Seeley), is a modest collection of four stories, all of them charmingly told, and sure to hold the interest of young readers. Each story has a pretty full-page illustration; the type is large, and the get-up is tasteful.

Stories for Girls.

The Little School-Mothers, by L. T. Meade (3s. 6d., Cassell), is a story of Abbeyfield School, near the New Forest, working out with the cunning of long experience and the charm of good feeling the play of many and varied youthful characters. The heroine, not having been previously taught or trained in regular fashion, but having read miscellaneously "grown-up sort of things" and heard her father "talking with other learned men," naturally proved, at first, somewhat of an *enfant terrible*. There is plenty of incident in the development of the narrative, and the tone is excellent. The style, too, is much superior to the ordinary girl's or school story. Eight coloured plates.

Little Miss Prue, by Bella Sidney Woolf (2s. 6d., Cassell), is the story of a twelve-year old girl. It is hardly likely that Sir Richard Upward, with his business experience, failed to insure his mills, but the burning of them and the consequent impoverishment of his son-in-law and his granddaughter Prue, provide the circumstances for the experiences of the heroine. The story is simple and interesting, and involves the unravelling of mysteries in the life of several of the other characters. Eight full-page illustrations.

Books for Children.

One of the most delightful of all the books of the season is *The Children's Iliad*, told from Homer in simple language by the Rev. Alfred J. Church, M.A., whose "Stories from Homer" and countless similar works have already charmed multitudes of youngsters (5s., Seeley). Mr. Church's hand has lost none of its cunning: the selection and presentation are masterly, and the style is as attractive as ever. There are twelve fine illustrations, delicately and beautifully coloured.

Messrs. Macmillan issue a delightful "Little Folks' Edition" of the ever popular *Alice's Adventures in Wonderland*, "adapted for very little folks from the original story," and furnished with thirty-two coloured illustrations by John Tenniel. The little folks should see that they get it.

The Little Folks Favourite Album in Colour, by S. H. Hamer (3s. 6d., Cassell), consists of a number of tales, mostly of animals, but also of pirates, holidays, birthdays, and other things that are likely to interest children, expressed in fairly simple language, and boldly illustrated with forty-eight coloured plates. The present issue will maintain the favour that this annual has already gained among little folks.

Cassell's *New Shilling Picture Books* contain simple stories and verses for children with coloured plates and a variety of black and white pictures in profusion. We have three specimens: (1) *The Tiny Treasury*; (2) *Simple Stories*; (3) *Just the Thing*. You may shut your eyes and make your choice: you cannot go wrong.

Various.

The New Forest, by C. J. Cornish, and *Fair Women in Painting and Poetry*, by William Sharp, are "Miniature Portfolio Monographs" (2s. net each, Seeley)—both in a new edition. *Things seen in Japan*, and *Things seen in Egypt*, both by Clive Holland (2s. net each, Seeley), seem to belong to another series, though they are extremely similar to the "M.P.M." That does not matter, however: they are also charming descriptive works, suitable for the pocket, and telling one sensibly the things that one cares to know about these most interesting countries. Mr. Holland permeates his facts with the spirit of the places, while he sets out in lucid order and in just prominence all that is needed for a good general impression of the country. Each volume has many pertinent and excellent illustrations. None of them is offered expressly as a Christmas book, but none of them is the less suitable in a modest way.

Mr. Cairns James, Professor of Elocution at the Royal College of Music and the Guildhall School of Music, not contented with producing a "Golden Reciter," has now edited *The Golden Humorous Reciter*—a vast collection of prose and verse for reading and recitation (3s. 6d., Seeley). A large number of authors have been laid under contribution, and "of the selections from copyright works, which constitute three-fifths of the volume, by far the greater number have not appeared in any other book of the kind." The collection is divided into six Parts: (1) satirical humour; (2) dramatic selections; (3) serio-comic pieces; (4) farcical humour; (5) humorous poems for children; and (6) general humorous prose and verse. There is something—a good many things—to suit everybody: Mr. Cairns observes the maxim of Goethe's shrewd theatre manager. The introductory remarks are the fruit of wide experience. A most comprehensive and interesting volume for readers as well as for reciters.

Wild Flowers in their Seasons, by F. Edward Hulme, F.L.S., F.S.A. (5s. net, leather, Cassell), is of agreeable interest all the year round, but will serve very well as a Christmas gift. The description is simple and adequate, and there are eighty coloured plates in illustration. The book will be very welcome to all that are fond of flowers, and will prove engagingly instructive. The get-up is excellent, delightful to the eye and to the hand.

1907.
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Lectures for Teachers
ON THE
SCIENCE, ART, AND HISTORY OF EDUCATION.

PRACTICAL PROBLEMS OF THE SCHOOLROOM.
To be delivered by Professor J. ADAMS, M.A., B.Sc., F.C.P., Principal of the University of London Training College.

The Third Course of Lectures (Thirty-fifth Annual Series) commenced on Thursday, September 26th, at 7 p.m.

The Problems to be dealt with occur in all Schools, and will be treated with that frankness that is possible in an unreported discourse, but is out of the question in a printed book. The subjects to be taken up will include such matters as Home-work, Relations with Parents, Inspection, Examination, Clerical Work, Types of Troublesome Pupils, the Individual and the Class, the Relations between Head Teacher and Class Teachers, Time Tables, Schemes of Work.

SYLLABUS.

I. (Sept. 26.) *Types of Troublesome Pupils:* Meaning of type: advantages of classification by types: dangers of such classifications: temperament and possibility of modifying it: correction of character: the ideal pupil as standard: deflections from the standard in two directions according as we consider intellect or conduct: manipulation of characters as actually found in school: specification of types and suggestions for their treatment.

II. (Oct. 3.) *The Individual and the Class:* Individual must be studied as individual: not always necessarily treated as individual: advantages of class teaching over individual instruction: maximum and minimum sizes of classes: relation between subject and size of class: teaching class through individual and *vice versa*: psychology of class as such: disintegration and redintegration of class: class leaders and their manipulation.

III. (Oct. 10.) *Parents and Home Lessons:* Spheres of the parent and the teacher in relation to school work: parent as teacher: parent as "preparation master": "causing another to learn": special characteristics of home work as compared with work done in school: principles on which kind and amount of home work have to be determined: the unit of home study: dangers of home study, with special reference to the nature of the home.

IV. (Oct. 17.) *Curricula and Organization:* Curricula as data: limits of variation of curricula at discretion of teacher: principles underlying the determination of curricula: relation of curricula to organization: organization by "sides": the Form System: Composite Forms: the place of the specialist teacher: various kinds of organization in which the pupils have a share in school government: principles on which the allocation of pupils to particular forms is determined.

V. (Oct. 24.) *Time Tables:* Esoteric and exoteric time tables: degree of detail: practical considerations in the drawing up of time tables: the unit of time in relation to the day, week, and term: fixed and variable quantities: application of law of diminishing returns: danger signal of fatigue: *ennui* and weariness: the influence of the meal hour: mental "second wind": danger of pathological brightness of intellect.

VI. (Oct. 31.) *Examinations and Corrections:* Educational and administrative purposes of examinations: evils of external examinations and means to minimize those evils: advantages of class examinations: how to draw up an examination paper: hints for pupils on how to work an examination paper: how to mark examination papers: various methods of marking ordinary written work in school: practical suggestions to save waste of time and ensure efficiency.

VII. (Nov. 7.) *Lecturing in School:* Distinction between lecturing and teaching: why lecturing is discredited in schools: recent tendency to return to lecturing in History, Science, and even Geometry: work demanded of the pupil who is taught on the lecture system: art of listening: preparation of lecture materials by teacher and by pupil: length of lectures in relation to stage of pupils: combination of teaching and lecturing.

VIII. (Nov. 14.) *Note-taking and Text-books:* Note-taking a correlative of lecturing: difficulties and dangers of note-taking: its place at different stages in the school course: how far it can be taught: relation to different school subjects: note-book as text-book: relation beteen teacher's work and the text-book: relation of text-book to pupil's private study: classification of text-books: tests of a good text-book.

IX. (Nov. 21.) *Apparatus:* Distinction from furniture: aids in actual teaching: danger of being dominated by apparatus: over-elaborate apparatus: ready-made and home-made apparatus: permanent and temporary: hints for preparing apparatus: various kinds of school maps: the optical lantern: various kinds of blackboards: use of the blackboard for writing and for drawing: uneducational and excessive use of the blackboard.

X. (Nov. 28.) *Special Methods:* The place in practical school work of the various special methods, such as the Socratic, the Heuristic, the Concentric: the principle of correlation of studies: dangers of rigid application of any one of the special methods: illustrations of the application of these methods to the ordinary school subjects such as Arithmetic, Grammar, Elementary Science: the next two lectures will supply further illustrations.

XI. (Dec. 5.) *Connection between Language and Literature:* The three vocabularies and their relation to language and literature respectively: possibility of *teaching* literature at all at the various stages of school life: relation of conversation and composition to literature proper both in English and in foreign languages: suggestions of exercises in English Composition suitable to prepare for the study of English Literature.

XII. (Dec. 12.) *Connection between Geography and History:* Geography a science: possibility of a science of History: neither can be taught quite independently of the other, though Geography is the more independent: Geography is the space setting of History: limitations of the correlation between the two subjects: applications of the Concentric and Heuristic methods: suggestions for practical problems that will bring out the true relations between Geography and History.

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THE

EDUCATIONAL TIMES,

AND

Journal of the College of Preceptors.

Vol. LX.] New Series, No. 560. DECEMBER 2, 1907.

Published Monthly, price, to Non-Members, 6d.; by Post, 7d. Annual Subscription, 7s.

COLLEGE OF PRECEPTORS.
EXAMINATIONS, 1907-1908.

1. DIPLOMAS.—The next Examination of Teachers for the Diplomas of the College will commence on the **30th of December.**

2. PRACTICAL EXAMINATION FOR CERTIFICATES OF ABILITY TO TEACH. — The next Practical Examination will be held in **February,** 1908.

3. CERTIFICATE EXAMINATIONS. — The Midsummer Examination for Certificates will commence on the 30th of June, 1908.

4. LOWER FORMS EXAMINATIONS. — The Midsummer Examination will commence on the 30th of June, 1908.

5. PROFESSIONAL PRELIMINARY EXAMINATIONS.—These Examinations are held in March and September. The Spring Examination in 1908 will commence on the 3rd of March.

6. INSPECTION AND EXAMINATION OF SCHOOLS.—Inspectors and Examiners are appointed by the College for the Inspection and Examination of Public and Private Schools.

The Regulations for the above Examinations can be obtained on application to the Secretary.

C. R. HODGSON, B.A., *Secretary.*

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The following *addition* has been made to the list of persons who are exempt from examination in certain of the subjects required for the Diploma of Associate:—

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The Examination will take place in London, and at the following Local Centres: — Birmingham, Bristol, Cardiff, Leeds, Liverpool, Manchester, Newcastle-on-Tyne.

Examination Fee, 25s. A local fee is payable by candidates examined at Provincial Centres.

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Information regarding the Examinations may be obtained from the SECRETARY, L.L.A. Scheme, The University, St. Andrews.

WINTER MEETING FOR TEACHERS.

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SUBJECTS.	PRESENT EXAMINERS.
English Language and the History of England and Wales	*The Rev. T. A. Walker, Litt.D., LL.D., M.A. Alfred J. Wyatt, M.A.
Mathematics	*J. H. Grace, M.A. W. H. Young, M.A., Sc.D., F.R.S.
Latin	*Frank Ritchie, M.A. Prof. C. Flamstead Walters, M.A.
Greek	V. S. Vernon Jones, M.A.
Welsh	*The Rev. Robert Williams, M.A.
French	Prof. Ernest Weekley, M.A.
German	Prof. A. W. Schuddekopf, Ph.D. M.A.
Dynamics	William Watson, D.Sc., F.R.S.
Experimental Mechanics and Heat	William Watson, D.Sc., F.R.S.
Chemistry	H. O. Jones, M.A.
Botany	*Prof. Michael Cressi Potter, M.A.

The Examiners whose names are marked with an asterisk have served for the full period of five years.

Particulars will be given by the REGISTRAR of the University, University Registry, Cathays Park, Cardiff, to whom application must be sent on or before January 7th, 1908.

J. MORTIMER ANGUS,
Registrar of the University.

November, 1907.

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In the Richmond (Yorks.) case the Court of Appeal, as was to be anticipated, has sustained the judgment of Mr. Justice Lawrance. It is most unlikely that the case will be taken to the House of Lords, and we may assume that the law, as here laid down in the case of the Richmond Grammar Schools, applies equally to all endowed schools that are under schemes drawn by the Charity Commissioners or their successors the Board of Education. In all such schools assistant masters are dismissible "at pleasure"—that is, as Mr. Justice Bigham interpreted the clause, without cause assigned and without notice. On the second point raised, the verdict of the Court of Appeal was no less adverse to the assistant masters. At the first trial, it will be remembered, the jury awarded damages to the dismissed master equivalent to a term's salary, on the ground that by the custom of the profession a term's notice was required; but Lord Justice Vaughan Williams agreed with Mr. Justice Lawrance that the Governors were not the right persons to be sued; and, as in this case obviously neither the outgoing nor the incoming head master could be sued, *cadit quaestio*. The assistant master, however arbitrarily and wantonly dismissed, has no legal remedy. The Governors of Richmond School have won their case, but it is like to prove a Pyrrhic victory, and the Assistant Masters' Association are to be congratulated on their public spirit in supporting the action, and so calling the attention of administrators and legislators to a grave public scandal.

We need waste no words in pointing out the injustice and the disastrous effects of the conditions of service in secondary schools that this trial reveals. The status of the assistant master is inferior to that of the domestic servant or the mechanic who is paid a weekly wage. The head master, as E. E. Bowen put it in his evidence before the Bryce Commission, is invested with a power "unexampled in the English public services — a power exceeding that of the Commander-in-Chief — that of summary dismissal on his own authority of any member of a large and educated staff."

And when we ask who is responsible for this state of things, there can be but one answer. The responsibility lies wholly with the Board of Education. Not only has the Board taken over the duties of the Charity Commission, but it has definitely and deliberately assumed the general supervision and regulation of secondary education. Nor can it plead that the question of tenure has been sprung upon it, and that it has not had time to reform the vicious system that it found in operation and to evolve a new policy.

Memories are short, and the lay public at least needs to be reminded of what happened in 1904. In that year a joint conference of the representatives of head and assistant teachers, presided over by Sir Edward Fry, after prolonged deliberation, agreed to certain resolutions determining the conditions of tenure for assistant masters. In brief, they assigned to the head master the right of appointing and dismissing his staff, but all appointments and dismissals were to be confirmed by the Governing Body, and the assistant, on appointment, was to hold office and serve under the Governing Body. In case of dismissal, the Governing Body were authorized to inquire into the mode in which the head master had exercised his powers, and a right of appeal was granted to the Board of Education.

This compromise, as satisfying the conflicting claims of the head and his assistants, was hailed with delight by the whole profession; but they had reckoned without their hosts. To a deputation that waited on the Board at the end of 1904 it was intimated that the Board were not prepared to undertake the new administrative and judicial functions which the masters sought to put upon them; and, in the Regulations for Secondary Schools of the ensuing year, it was laid down that the head master should have formally secured to him the right to be consulted by the Governing Body as regards staff appointments; but the rights of the staff are passed over in silence, and, as far as we are aware, the fatal Clause 40 of the Richmond scheme, sanctioning dismissal "at pleasure," is still common form in all schemes drawn by the Board.

What, we ask lastly, is the remedy? The data of the problem are comparatively simple. Most are agreed that a school should be a limited monarchy. To work harmoniously, the head master should, as far as possible, have the appointment of his staff. To this power there are certain obvious limitations. That a new head master should have the power,

as in the Richmond case, of making a clean sweep in order to start with his own nominees, is monstrous. It would be as reasonable to give a newly appointed colonel discretionary powers to re-officer his regiment. It is only one degree less monstrous that a raw and inexperienced head master who has just passed his Tripos should be able to give a term's notice to all the senior members of his staff.

It is also clear to us, though here we are touching more debatable ground, that when a master is once appointed he should not be dismissible without definite cause assigned. It is urged by head masters that often a *vera causa* cannot be formulated in writing, but, as in some countries incompatibility of temper is held a sufficient cause for divorce, so we should judge that a head master, who through no fault of his own found himself unequally yoked, would have no difficulty in convincing his Governors that a dissolution of the partnership would be for the advantage of the school. A head master who is worth his salt has the whip hand, and can always resort to the ultimatum, "Either X goes or I go," and in nine cases out of ten it will be X who goes. In any case, if teaching is to be a learned profession, there must be the possibility of appeal.

Whether the Board of Education would constitute the best Court of Appeal is another matter. The lawyers on its staff would be apt to take too legal a view of the case, and it would not be advisable that inspectors, who do know something of the conditions of secondary schools, should be mixed up in domestic quarrels. When the new Registration Council, which is to be representative of the profession, is constituted, it would seem natural that it should be entrusted with functions analogous to those that are so satisfactorily performed for their respective professions by the Medical and the Bar Council.

NOTES.

The *Morning Post* (November 16), in an article significantly headed "The Noblest and the Meanest Profession," puts its finger on the essential conditions of an adequate supply of adequate teachers :—

> The three things required in order to attract an adequate supply of teachers are reasonable remuneration, which should be increased from time to time contingent on efficiency, reasonable security of tenure guaranteed by the Local Authority, and the provision of a reasonable pension after thirty years of service. On the second of these *desiderata* we do not at present propose to dwell at any length, as the question of tenure is still *sub judice*. We will only emphasize the fact that these three conditions of service are already embodied in the educational systems of nearly every civilized country from which we have anything to learn. . . . Education in itself unfortunately rouses little enthusiasm in this country. It may well prove an impossible task to convince the public that sound education demands skilled teachers, and that skilled teachers can never be obtained in sufficient numbers to man our schools until the conditions of service are moulded anew in such a way as to assure some lasting satisfaction of a material nature to those who espouse the arduous task of doing the nation's work by educating her sons.

Though it may be true that education does not raise much enthusiasm in this country—at any rate, enthusiasm of the effervescent variety—still there is certainly a wider and more serious interest in the matter than in most bygone periods. The cause of education appears to suffer from the dispersion of energy applied in advocating it. The policy of concentrating experience and knowledge upon the capture of the real authorities might be practised further with advantage. The public is probably much less blameworthy than the spokesmen of the public. Anyhow, these three conditions are urgently necessary.

Messrs. Sherrat & Hughes make the piquant announcement of the immediate publication of a very important inquiry into the place of continuation schools in the educational system of an industrial and commercial State. The volume is edited by Prof. Sadler, who contributes, in addition to a comprehensive introduction and several other articles, a luminous historical review of the agencies for further education in England from 1780 downwards to the present year of grace. The rest of the volume consists of over a score of chapters from many experienced writers, describing the continuation school in all its aspects and in different countries, and treating the numerous questions arising in connexion with it. We have already insisted on the immense importance of this subject. "In the course of every year," says Prof. Sadler, "more than half a million children in England and Wales leave the public elementary schools at thirteen or fourteen years of age," and "not more than one out of every three of these children receives, in point of general or technical education, any further systematic care; yet those who fail to receive such care are, broadly speaking, those who need it most." The mischief is increased by certain economic changes. For example, it has become so much more easy for boys of thirteen or fourteen to obtain unskilled work at wages that flatter their sense of independence, while they presently outgrow it, and are left without substantial employment. The causes of the mischief are also in part psychological, and thus more subtle. The intellectual upheaval, with its independent tendencies, has involved the younger generation. The subject opens out not only complicated questions of educational administration, but also difficult aspects of a grave problem of national life. We shall look forward to the volume with keen interest.

Those of us that are specially interested in child study will find a convenient source of reference in the September issue of the *Pedagogical Seminary*, which is conducted with so much knowledge and energy by President Stanley Hall, of Clark University, and is readily accessible here through the well known publishing house of Messrs. Kegan Paul, Trench, Trübner, & Co. The number contains a "Bibliography of Child Study for the Year 1906," by Louis N. Wilson, the Librarian of Clark University—362 entries of works in the principal languages of Europe, representing the activity of students of the subject in both continents. With this is associated a "Bibliography of Articles relating to the Study of Childhood and Adolescence which have been published in the *Pedagogical Seminary* and *American Journal of Psychology*"—203 entries, covering the last fifteen years. "The greater part of these studies," says the compiler, Theodate L. Smith, "have been made at Clark University under the direction of President G. Stanley Hall," while the rest have been contributed by students of child psychology

formerly connected with that University, or by workers in sympathy with the inquiry. Appended also is a list of ten works on childhood and adolescence published by writers connected with Clark University. It is obviously most important that investigators should know what is being done by their colleagues; and these lists will be a valuable index to the labours of all the workers in this field of educational inquiry. In this connexion, we take the opportunity of mentioning the *Kindergarten Primary Magazine* of New York, which is "devoted to the child and to the unity of educational theory and practice from the Kindergarten through the University," and is conducted with great ability and enterprise.

The conferment of the Oxford D.C.L. upon a foreign potentate has rarely, we should imagine, any significance beyond an expression of international comity; and very probably that is all that it means in the case of the German Emperor. A knowledge of law, curiously enough, is entirely irrelevant, though, when we learn that the Emperor was fresh from conducting an orchestra, we hesitate to place limits to his acquirements. An esteemed contemporary, while acknowledging that he deserved his doctorate, states negatively that it is "not because, like that of Justinian, his reign has been distinguished so far by any notable codification of existing laws." We should have said, on the contrary, that such a codification is one of the most notable events of his reign. The first draft of the German Civil Code, which embodies the main parts of German private law, was finished, it is true, before his accession; but the second draft was made under his auspices, and the Code was passed into law in 1896, and came into force on January 1, 1900. At the same time the Commercial Code and the Code of Civil Procedure were entirely transformed, and, with much supplementary legislation, enacted before the Civil Code came into force. We begin to doubt whether there is not rather more in the Justinian parallel than our contemporary imagines, and whether the Emperor did not deserve his doctorate on purely legal merits a dozen years ago. Another aspect of the event is also of some interest, and that is that so powerful a personage should recognize that the approval of a body of scholars can confer honour even on him.

Norrköping, the chief seat of the textile industry of Sweden, and, after Stockholm, the principal Swedish seaport on the Baltic, has some 45,000 inhabitants, of whom every fifth person is a factory hand. Now, how do the town authorities combat the illness and poverty incidental to a factory town? By hygienic school-houses and by an excellent education. "In the long run," says Dr. J. Bager-Sjögren, Superintendent of Board Schools, in a most interesting pamphlet (with plans and pictures), "it will always be evident that the best remedy for the degenerative influence of town life and industry is to be found in a good education—an education that gives rise to noble pursuits and energetic wills at the same time that it hardens and strengthens the physical powers. The richest results are to be reached by such an education, if combined with an instruction comprising not only the old school subjects, but also such newer subjects as wood and metal Sloyd, women's handiwork, domestic economy, hygiene, art, &c." Norrköping has thirteen educational establishments surrounding it: "with fortifications of that kind the town has intended to found its prosperity." Only one Board school is "in the inner quarters of the town," mainly for administrative convenience, and even this school also "has the advantage of verdant surroundings." When a new school-house is to be built, "a whole quarter is allotted to it, and great care is taken that the sun may shine into all the class-rooms and send his beams also to the playground," and "that no noise may disturb the work." The people prefer small school-houses to big ones, deliberately, in spite of the greater expense. We cannot outline the peculiarities of "the Norrköping type" of school-house construction; but there are no long through corridors, plenty of separate cloak-rooms, and many entrances and staircases. It is remarkable how keen are the Northern peoples for the best education under the best conditions.

There has been an extraordinary epidemic of educational "ragging" or other disturbance. London medical and other students have disported themselves and disquieted the lieges with a snuff-shop Highlander, a "Brown Dog," and the effigy of an obnoxious police magistrate. Lampeter men have "booed" a professor, and will not tamely resign the glorious privilege of initiating freshmen. In douce Scotland, the Glasgow students have demonstrated "hooliganism in Bute Hall." "In vain the Principal called for order; he was unheeded; the yells, and whistling, and motor-horn noises rose more stridently than ever; visitors were aghast"—says the veracious chronicler. At the Royal University of Ireland, "the dons avoided the risk of serious disturbance by silencing the organ," which offends the students when it plays "God save the King"—evidence (says a contemporary) of "the serious character of the seditious sentiment which is so widespread in Ireland at the present moment." At Cambridge, they have been breaking things; and the Vice-Chancellor of Oxford University concludes that the city should be re-christened "the bear-garden of the rowdy rich." The Paris medicals, if we mistake not, have been locked out till the new year. There is nothing new in the report that "the Vienna University has been temporarily closed, owing to rioting between the Italian and German students," or in the news that "the conflict at Gratz has already found an echo at Milan and Rome," where anti-Austrian demonstrations "are being held with great success." Of course, there is usually a great deal of exaggeration in the reports. It is also noteworthy that in such cases, as in matters of political consequence, the insistent thing is to vindicate law and order—not to remove the causes of dissatisfaction, where there are such causes, and not (as in the London colleges) merely animal spirits. Certainly we do not like educational disturbance, but it is reassuring to find that there is such a vast force of physical energy at the command of those that know how to utilize it. And evidently there are yet not a few folk that might learn a lesson from Lord Collingwood—and from the ordinary course of nature.

SUMMARY OF THE MONTH.

The Board of Education have just issued an important Memorandum for the guidance of Local Authorities in the enforcement of the Act providing for the medical inspection of children in public elementary schools, which comes into force on January 1 next. "The Board desire," it says, "to emphasize that this new legislation aims not merely at a physical or anthropometric survey or at a record of defects disclosed by medical inspection, but at the physical improvement, and, as a natural corollary, the mental and moral improvement, of coming generations. The broad requirements of a healthy life are comparatively few and elementary, but they are essential, and should not be regarded as applicable only to the case of the rich. In point of fact, if rightly administered, the new enactment is economical in the best sense of the word. Its justification is not to be measured in terms of money, but in the decrease of sickness and incapacity among children and in the ultimate decrease of inefficiency and poverty in after life arising from physical disabilities." It is laid down that in the administration of the new Act efficiency and economy require an organic relationship between the daily work of the School Authority and of the Authority responsible for the administration of the wider branches of public health, including the supervision of water and milk, food, housing and sanitation, and matters affecting infant mortality. "The Board have decided that not less than three inspections during the school life of the child will be necessary to secure the results desired. The first inspection should take place at the time of or soon after admission to school, the second at or about the third year (say, the seventh year of age), and the third at or about the sixth year of school life (say, the tenth year of age)." It is recommended that one or both of the parents of the child should be present at the first inspection. One of the objects of the new legislation is to stimulate and to educate the parental sense of responsibility for the personal hygiene of the children.

In reply to a deputation from the Victoria University of Manchester, with reference to the proposed reduction of the Government grant from £12,000 to £10,000, Mr. Asquith said that, in allocating the £100,000 which the Government set aside for higher education, the Treasury was guided by recommendations of an independent committee, who proposed the reintroduction of a maximum grant, which they had fixed at £10,000. He undertook to consult the committee with respect to the Victoria University's claim.

At a meeting of the North-western division of the Incorporated Association of Head Masters, held at Manchester Grammar School (Nov. 9), Mr. G. A. Stocks (Blackburn Grammar School) in the chair, the following resolutions were discussed and passed unanimously:

1. That this meeting urges upon the Central Council to recommend to Local Authorities the adoption of the bursary system, and the re-arrangement of the pupil-teacher system which this will necessitate.
2. That the Board of Education be urged to continue the special grant mentioned in section 34 (*a*) of the Regulations for the Preliminary Education of Elementary School Teachers for another year.
3. That it is desirable (*a*) that in the examination conducted by the Joint Matriculation Board a paper on elementary physics should be included among the optional papers; (*b*) that the examination of the Joint Board of the Northern Universities should be accepted for matriculation by the University of London.
4. That inasmuch as the secondary schools are closely associated with the University of Manchester, and have therefore exceptional opportunities for observing its great power in education and in commerce, this meeting deplores the material reduction of the Imperial grant as calculated to limit and diminish its activities, and hopes that the matter will be reconsidered by His Majesty's Government.

A motion by Mr. Paton approving the new regulations for secondary schools was considered, but as the approval of the meeting was not unanimous it was withdrawn, and an amendment expressing approval of the educational and financial changes was adopted.

A well-attended meeting of the Second Division of the Incorporated Association of Head Masters was held (November 2) at Brighton Grammar School. Mr. S. O. Andrew (Whitgift, Croydon) introduced the subject of "Public Examining Bodies and the Schools." He pointed out the difficult position in which masters were placed in preparing pupils for qualifying examinations. By mere verbalities, a pass which apparently qualified was found not to do so. The requirements vary in trivial respects so that candidates may be forced, apparently, to take the examinations held by the public examining body itself. Even the Universities, it would appear, are not altogether free from varying standards. For instance, a boy who satisfies the examiners in the Oxford Senior Local in Classics may dissatisfy the University in Classics as regards Responsions—*i.e.*, he may fail to obtain exemption. Again, he may fail to satisfy in Mathematics, and yet he may satisfy sufficiently to be excused Mathematics in Responsions. The only effective way to deal with these arbitrary proceedings, Mr. Montgomery (Uckfield) pointed out, would be by a Royal Commission; and the Division forwarded a resolution to the Council, pointing out that the conditions of these regulations imperatively demand revision. The Division again forwarded to the Council a resolution, asking for the metric system to be discussed at the annual general meeting, and urging its sanction and approval by the Board of Education. The recent Board of Education Regulations were brought forward, and the Council was asked to put the discussion of them down for the annual general meeting also. The chairman (Mr. S. O. Andrew, Whitgift, Croydon) and hon. sec. (Mr. C. Jodrell Mansford, Dartford) were re-elected.

The third annual general meeting of the Association of Teachers in Technical Institutions was held (November 9) in the South-Western Polytechnic, Mr. Mundella (the President) in the chair. The report of the Council showed that much useful work had been accomplished, and that there had been a vigorous growth in membership and influence. The membership had increased during the year by nearly 50 per cent., and was strongly representative of teachers in technical institutions in London and the provinces. There were now seven large branches of the Association, and three had been formed during the year, namely, in London, East Midlands, and Birmingham and district. A large amount of necessary internal work had been done during the year by redrafting the constitution and rules so as to bring the management of the Association into complete harmony with the present conditions, which had changed so rapidly since the foundation of the Association in 1904. The educational work had been of great importance, and the Association was represented officially on the Advisory Committee of the City and Guilds of London Institute to revise the syllabus and regulations for the examinations in electrical engineering. A syllabus on mathematics was also drafted by a special committee representing mathematical teachers, and forwarded to the Board of Education for their consideration. Other matters, such as mechanical engineering, building, gas manufacture, domestic science, metal plate work, and chemistry, had been dealt with during the year, and the opinions of the teachers of these subjects had been collected and forwarded to the examining authorities concerned. The introduction and development of the "Course System" had been encouraged in every way possible, as the only satisfactory method of organizing technical education in this country. The Association was in close touch with other educational organizations. The registration of teachers was such an important question that the Council was willing to support a "one-column" Register rather than have no Register whatever. At the same time, it was strongly of opinion that there must be adequate representation of technical institution teachers on the Teachers' Registration Council, if such be formed. The Council regretted that there was no direct representative of technical education on the Consultative Committee of the Board of Education. It had also made important recommendations with respect to the Imperial College of Science and Technology, particularly with regard to the inclusion of work other than post-graduate and research in the curriculum. Professional assistance had been given to teachers who were in need of advice and help with respect to the interpretation of agreements, or the settlement of disputes owing to the absence of definite written agreements. Mr. Charles Harrap (St. Bride's Institute) was appointed president for the ensuing year.

The autumn meeting of the Classical Association of Scotland was held at Glasgow University on November 16. Prof. G. G. Ramsay, who presided, delivered an address, in which he drew attention to the new conditions recently laid down for secondary schools in Scotland for the obtaining of the intermediate and

leaving certificates, and the influence they were likely to have on Greek and Latin. The possession of the intermediate certificate was in future to be a necessary condition of eligibility for the leaving certificate, and so of entrance to the University, and the question vitally affected the whole course of secondary education in Scotland. He thought that the curriculum suggested was excellent, but he also knew how undesirable it was to lay down, without infinite harm, a stringent, Draconian rule to be applied in all cases alike. They wanted greater freedom and elasticity in the curriculum, both in the interest of the literary and of the scientific mind. Prof. Phillimore read a paper on "Unseen Translation as a Teaching Instrument," and a communication from Prof. John Brown, New Zealand, was submitted on "Classical Education" in that country. In the afternoon a public lecture was delivered by Prof. Ridgeway, of Cambridge, on "The Relations of Archæology to Classical Studies." The term archæology he did not mean to be understood in the restricted sense of simply applying to mere pots and pans—with which it was so often bound up in people's minds—but rather to what they would call, in classical instruction, antiquities, which were now usually spoken of rather as anthropology, and which embraced not only the material productions of man but also all that related to his sociology and his religion. He inclined to believe that the reaction and revolt against classical studies had been entirely due to the false methods of classical scholars themselves. The success of classical studies must depend on how these three elements—literature, verbalism, and archæology—were united to each other. As the spirit was above all things essential, so literature in this trinity must be before, and the other two must be after. Archæology and the work of the grammarian must be ancillary to the real objects of classical study—namely, literature itself. The three taken together, properly combined and interwoven, would make that triple cord which was not quickly broken—nay, rather, he should say, a strong cable which for generations to come would be able to give safe mooring to classical studies in every system of higher education.

At the autumn meeting of the Western Branch of the Scottish Association of Secondary Teachers, Mr. Duncan M'Gillivray (Bellahouston Academy) read a paper on some aspects of the "Higher Education in America." He found that the deep-seated unrest in the social world had its counterpart in the sphere of education. The history of American high schools read like a chapter from our own, but the difference in age between pupils in American schools and in schools at home made a comparison of attainments a matter of great difficulty, though on the whole, from a point of view of exact knowledge, be believed that our pupils are quite two years ahead of those in the States. He was not certain, however, that in real educational value the discrepancy was anything like so great. Two characteristics distinguished American schools from ours—the first was the prevalence of the elective principle of studies, whereby a choice of subjects was given to the pupils. This system appeared both in the Universities and in the high schools. All teachers that the speaker met were agreed as to the advantage of the system, and the extraordinary development of the high school system was ascribed by the most competent authorities to the adoption of this principle. There was an outcry in America about an overburdened curriculum, but it appeared moderation when contrasted with ours. Another point of contrast between the two curricula was the importance attached to natural science. Physiology, biology, and botany were studied during the first, and sometimes the second year, but these were not compulsory like the physical sciences. He thought that in this country we had been giving far too much attention to the physical sciences, to the neglect of the natural sciences. Examinations, whether external or internal, did not play such a prominent part in school life as with us. Physical training had occupied a prominent place in American high schools for the last ten or fifteen years. Athletics constituted the most popular and obtrusive form of this training. Within bounds and with proper safeguards, inter-school competitions afford an excellent means of developing a corporate feeling and a healthy *esprit de corps*. But in America it seemed impossible to keep anything within bounds.

A meeting of the Bristol branch of the English Association was held at University College on November 1. The chairman (Prof. R. P. Cowl) announced that it was proposed to form a Guild of Education, at which addresses would be given on subjects of common interest to their own and similar associations, and a sub-committee was formed to confer with representatives of the other societies. The subject for discussion was the leaflet issued by the Central Association on "The Teaching of Shakespeare in Secondary Schools." Instructive notes on the teaching of English literature were obtained in the various experiences of members, and some profitable criticism of the suggestions was elicited by the discussion.

The education and training of the French primary-school teacher is the subject of one of the Special Reports on Educational Subjects issued by the Board of Education, and just published. The educational history of the French primary teacher is commenced when he leaves the primary school, in common with his fellow pupils who are going into other occupations. He (or she) goes first to the *école primaire supérieure* for three years, and thence to the *école normale* for another three years, if, that is, the student does not now elect to begin teaching with the minimum qualification of the *brevet élémentaire*. The Report gives particulars of the system adopted in each of these two stages. Mr. A. M. Saville, assistant master at St. Olave's School, who spent a year as English master in one of the former (higher primary school), supplies a clear account of the work done. While acknowledging the excellence of the teaching, he regards the general results as not favourable. "If," he says, "one were to ask whether the education received made 'men' of the boys, whether it was a stimulus to a boy's moral life, it must be confessed that it is very largely a failure. Life in a higher primary school is monotonous and barren. The day is long and too crowded with classes and preparation. There is no time for healthy exercise, for the outlet of animal spirits." Mr. B. Dunville, lecturer at Islington Day Training College, furnishes the report on the French training colleges, which he considers are, on the whole, doing "a great and lasting work."

In the introduction to the report, attention is called to the fact that the profession of the teacher in the primary schools of France is quite distinct from that of the secondary school teacher. Yet the service is a State one, with the social status that is accorded to the civil servant of whatever rank, with an adequate pension in prospect. Another important differentiation of the French method of training from that adopted in this country is the complete absence of the pupil-teacher system. As a consequence of this, the teacher has but very little practical experience of his profession before he enters upon his life's work as a "stagiaire." A small practising school is always attached to every training college, but the school is generally a single-class one, and the Ministry of Instruction are endeavouring to enlarge these schools and to encourage the students to visit the local schools frequently.

UNIVERSITIES AND COLLEGES.

(From our own Correspondent.)

Cambridge. The Financial Board tell us that the taxable income of the Colleges (*i.e.*, the net or free income not specifically devoted to definite purposes under trusts) is the ridiculously small sum of £242,498. We really are paupers. The average undergraduate spends about £200 a year, of which about £60 is absorbed in compulsory payments to his College for educational and establishment expenses. Total, well over £570,000 a year. Was Cecil Rhodes right?

A useful little improvement has been made in the regulations for the M.B. and M.D. degrees. Hitherto the thesis required for these degrees has been dealt with by the professor or his assessor; but now, it is justly pointed out, many of the dissertations are records of researches of a very highly specialized character, and require to be dealt with by experts in the various topics of which they treat. The arrangement that such experts may be called in to assist the professor is an eminently sound one, and will lead possibly to an improvement in the work itself. In this connexion, we may here offer our congratulations to the Regius Professor of Physic, whose new honours will be taken as a compliment not only to himself, but to the distinguished school of which he is the head. Our professors reasonably aspire to ordinary knighthoods, but a K.C.B. is a graceful honour to one who deserves it. Perhaps some day the onerous and important work—the real work—of college tutors will be recognized; and, if so, Mr. J. D. Duff, of Trinity, would have to be made a Peer.

The visit of the King and Queen of Spain passed off excellently well. The boys shouted and cheered, but there was no disorder, and the streets were not unduly thronged.

The bad conduct of a certain section of undergraduates at the

theatre has led to a resolution being formulated by the representatives of the leading clubs, expressing the opinion which is generally felt by all decent people at the noisy and vulgar conduct of men who, by their behaviour, make the theatre a difficult place for ladies. At the same time, the signatories issue a word of warning to the theatre management as to the choice of plays, it being well known that a certain class of performance is sure to elicit the disturbances complained of. It is an incontrovertible fact that the audiences at the Cambridge Theatre are as discriminating as any in the country; and to hear distinguished actors, like Oscar Asche and Miss Lily Brayton or the Kendals, is more thoroughly enjoyable here than it would be even in London, so keen is the critical appreciation exhibited. The days of the rowdy ruffian in Cambridge are numbered, and we are thankful.

The Agricultural department is to have its permanent home close to the Botany School; this is one of the best positions in the ground purchased some years ago from Downing College.

A most interesting function will take place on December 4. Fifty years ago David Livingstone delivered a lecture in the Senate House, from which followed in slow, though natural, sequence the foundation of the Universities' Mission to Central Africa. This fiftieth anniversary will see a meeting addressed by the Archbishop of Canterbury, the Bishops of Ely, Ripon, and Southwark, the Masters of Trinity and Magdalene, and others. The speakers in this unique celebration will be able to point to a great record of splendid achievement.

In the athletic world there is not much to chronicle. There is abundance of good material among the rowing men, though t is too early to hazard an opinion as to our chances at Putney. Our Rugby team is adversely criticized by the papers, but, for all that, is at the present moment in the opinion of this deponent, quite good enough to beat the opposing side.

These notes cannot conclude without an allusion to the sudden death of Louis (or as all his old friends knew him) Oscar McLeod, the captain of the team for the past two years and brother of the present captain. On the Thursday he was among us strong, vigorous, and energetic as ever, on the Tuesday morning his friends were shocked to hear that he had passed away in the night after an operation for appendicitis. Rarely has any death cast such a gloom over the university world. He was a man of many friends.

The dinner to Mr. Austen Chamberlain passed off most successfully, but politics generally are peacefully slumbering. We are all busy; Tariff Reformers and Freetraders, Liberals and Conservatives lie down together, and think only of their own Trials and Triposes.

Oxford. Lord Curzon has been discussing with all the chief authorities ways and means by which University education may be made so efficient as to avoid the tender offices of the threatened Royal Commission; and at least one important development has already been decided upon. Much fuller opportunity will in the future be given for research work independently of examination. Particular requests to this end have been received from the German, Colonial, and American Rhodes scholars, chiefly for whom "research degrees" have lately been established, and it is hoped that a great impetus will be given both to science and history teaching by these extensions and relief from routine. Other reforms discussed include changes in the business organization of the University, and the appointment of the more brilliant and stimulating college lecturers to special posts as University lecturers; while many hope that it will be found possible to increase the number and improve the status of the more democratic portion of Oxford, the unattached student.

London. From the report of the University Extension Board on their work for the session 1906–7 it appears that excellent work was done at the holiday course for foreigners, which began on July 22 and lasted till August 16. The attendance was larger than in any previous year—namely, 248, of whom 142 were men and 106 women. Fifteen European countries were represented, and, in addition, Egypt and Japan. The number of University extension courses delivered during the session was 172, an increase of six on the total for 1905–6. The number of students' entries for the courses was nearly 14,000. A training course for lecturers was conducted with great success by Prof. Adams and Dr. H. H. Hulbert. The report also refers to the plan of co-operation, which has been arranged with the London County Council, by which students at the evening lectures organized by the Council will be encouraged to pass on to the University extension courses, and to the movement for bringing working people into closer touch with the University extension work. The number of schools inspected by the University and the number of pupils taking the school examination (matriculation standard) and the junior school examination all showed an increase on those of the previous year.

Dublin. "There are rumours (says the *Crown*) that our rulers—the Board—are preparing to take in hand seriously the question of reform. If they really set themselves to carry out the recommendations of the Royal Commission, they will do an immense service to the College. Every one will prefer that the change should come from within rather than through the intervention of Parliament. Sad experience has taught most of us, whatever our politics, that when the English Government interferes in Irish affairs, however excellent the intention may be, the result is usually to leave confusion worse confounded. It is this conviction that has always made the party of reform in the University hesitate about appealing to Caesar. . . . Now the Board is itself the principal grievance of the reformers. It consists of the seven senior Fellows along with the Provost, and this body is practically all-powerful. Our Senate is absolutely impotent; the Council is little more than a Board of Studies. As there is no rule of retirement, and as it is very rare for a senior Fellow to retire voluntarily, it follows that the Board always consists entirely of old men. It sometimes happens that not one of the eight gentlemen is underseventy. But this is not the only objection to the present system. Succession to the Board goes by mere seniority—not by competence—so that there is no guarantee for the business capacity of those who rule the College, who administer the main offices, and manage the finance. Besides, it is only Fellows who ha ve a right to succeed to the Board; most of the professors, not being Fellows, are thus excluded from any share in the task of governing. Such a system is obviously indefensible."

McGill. The Chair of Education offered to McGill University by Sir William Macdonald some time ago, will, it is expected, soon be formally instituted. Owing to the difficulty in obtaining a qualified professor, it was not found possible to begin regular teaching at once, and so the full work of the Chair will not commence until the session 1908–1909. In the meanwhile, however, with a view to continuing the important work which used to be represented by the lectures on pedagogy given by Dr. Robins while Principal of the Normal School, the University has availed itself of the services of Prof. Locke, Head of the Teachers' Training Department of Macdonald College. Mr. Locke is to give the statutory course of lectures required for the diploma. A further arrangement has been made by the University Authorities, by which a course of lectures will be provided, to serve as a general introduction to the operations of the new Chair of Education. Mr. E. B. Sargant, well known in Canada as having organized, partly with the help of Canadian teachers, the schools in South Africa after the war, and who is still educational adviser to the High Commissioner in South Africa, is now in Montreal, and has undertaken, in response to the invitation of the University, to give a short course of lectures.

Macdonald College, Quebec. Macdonald College, Quebec, established and endowed by Sir William Macdonald, of Montreal, was opened to students on November 7. The object of the founder is the advancement of education, the carrying on of research, the spreading of knowledge likely to benefit rural districts, and the training of teachers for rural schools. The college property comprises 561 acres, and has been divided into the campus of 74 acres, where the buildings are located, with demonstration plots for grasses and flowers; a farm of 100 acres for horticulture and poultry keeping; and a live stock and grain farm of 387 acres. The buildings have been planned in accordance with the most modern scientific principles. The cost of the buildings and equipment exceeds £300,000, and in addition Sir William Macdonald has provided a permanent endowment of £400,000. The college is incorporated with McGill University, and Dr. James W. Robertson, C.M.G., is the principal. The college includes a school for teachers, a school of household science, and a school of agriculture. Tuition will be free to residents in the Province of Quebec.

V. How far do we feel that the development of character should also be unconscious like the development of the body? We all feel that, character is the root of the matter; but how far should children be conscious of this? There is no formal moral instruction in these schools, yet there is evidently a clear conception of the ethical function of the school. There is formal instruction daily in religion, yet hardly one child mentions it.

This is one of the deeper matters which belong to the inner sanctum. Wild horses will not drag from boys a word about religion; but one could not make a greater mistake than to argue the absence of feeling from the absence of expression. What it means is this: "Into these feelings I allow no stranger, not even my teacher, to intrude."

Religion Mentioned.

Age.	School I.	School II. Girls.	School II. Boys.
14	—	—	—
13	1	—	1
12	2	2	1
11	—	—	1
10	1	—	—
9	—	—	—

Character and Conduct.

Age	School I.	School II. Girls.	School II. Boys.
14	In general 4, honesty 2, manners 1.	——	——
13	In general 16, honesty 5, industry 2, kindness 3, steadiness 1, not to "gambol" 1, meet difficulties unflinchingly 1, manners 13, obedience 7, cleanliness 2, punctuality 1.	In general 3, honesty 2, truth 4, kindness 4, to animals 1, self-control 2, industrious 1, avoid bad friend 1, useful at home 1, brave 1, manners 12, obedience 10, punctuality 1, tidiness 1, respect 1, not to talk 1.	In general 5, industry 4, honesty 2, truth 1, helpfulness 1, manners 20, obedience 10, cleanliness 4, punctuality 1, self-restraint 4.
12	In general 5, honesty 4, truth 1, manners 18, obedience 6, cleanliness 3, promptness 1.	In general 9, honesty 5, industry 2, truth 6, braveness 1, helpfulness 1, kindness 1, to animals 1, manners 12, obedience 11, punctuality 4, cleanliness 4.	In general 2, truth 2, duty 1, manners 7, obedience 5, punctuality 2, kindness 1.
11	In general 2, helpfulness 1, honesty 1, truth 1, manners 5, obedience 6.	In general 10, braveness 1, helpfulness 2, industry 2, self-control 1, truth 1, kind to animals 1, love flowers 1, faithfulness 1, manners 16, obedience 18, neatness 2, punctuality 1.	In general 10, honesty 1, truth 3, duty 1, kindness and gentleness 1, to animals 1, faithfulness 1, braveness 1, helpfulness 1, to get from bad habits 1, manners 15, obedience 8, cleanliness 4, punctuality 1, respect 1, self-restraint 2.
10	In general 2, honesty 1, industry 1, manners 8, obedience 7, cleanliness 1.	In general 8, honesty 1, truth 3, self-restraint 2, do good in world 1, industry 1, manners 9, obedience 12, cleanliness 1, punctuality 1.	In general 8, kindness 4, to poor 1, honesty 2, self-control 1, faithfulness 1, manners 10, obedience 13, punctuality 2, cleanliness 1, attentiveness 1.
9	In general 0, industry 1, manners 2, obedience 1.	In general 5, honesty 1, truth 3, industry 1, manners 6, obedience 5.	In general 5, kindness 1, to poor 1, to animals 1, honesty 2, self-control 1.

The noticeable feature here is the inconspicuous part played by religion, in which subject there is formal instruction daily, and the prominent part played by manners, in which there is no formal, but merely incidental, instruction. In the girls' papers, to learn manners is nearly always the first reason given; obedience is usually coupled with manners; sometimes they come to school that they may "learn to obey at home." Religion is evidently conceived as an ethical subject, as bearing on conduct; it is not learning about God's nature, but learning about God's will as applied to conduct, that is the child's concern. This conception is frequently negative, especially in the younger boys' papers: "not to play in school, not to be naughty, not to pick and steal, not to be impident," "not to talk in school, which is a rule against us," "to learn that when we want to do something wrong we must try to check ourselves." This is the stage of ethical conception which appears in the savage taboo and the Roman *religio*. But some of the positive expressions are interesting: "because we have good things shown us," "to learn good doings and ways," "to own a good character so that shopkeepers will think that we will do straighter off," "to be polite to dumb animals," "to be good when teacher has gone out of the room" (this is Almond's "behind the back obedience"). The stress laid on manners should go far to meet the cheap cry of the ignorant caviller, "Why don't they teach manners in the Board School?"

VI. The question of friendships is easily dismissed. Though several mention that they come to school to learn to avoid bad friends, they seem to have absolutely no idea of school as a place where they mix with other boys either in competition or in comradeship. The retrospect of later life almost invariably regards school as the place where friendship was purest, and sweetest and gayest, but clearly this is not realized till after school is over.

Age.	School I.	School II. Girls.	School II. Boys.
14	—	—	—
13	—	—	—
12	—	—	—
11	—	1	—
10	—	—	—
9	—	—	—

VII. We have seen how the bread-and-butter element bulks largely in the children's thought; that is inevitable in a world where, to use Emerson's phrase, "things are in the saddle and ride humanity." But the service of self does not bulk so largely as to exclude altogether the service of others. There is feeling for school and for country. The city which built the school and finances it is not so much as mentioned.

Age.	School I.	School II. Girls.	School II. Boys.
14	—	—	1 School
13	1 School	—	1 Our children 3 Country 1 School
12	2 School 1 Country	—	1 General
11	2 Country	1 School	1 Country
10	—	—	1 Country

Some of these replies are interesting: "to learn our children to be good and wise"; "to make our country proper in its works"; "to help to enlighten other people's burden"; "to make England"; "hoping to be a credit to my school and teacher."

This ends my analysis of the two public elementary schools. I had one category under which no entries were made—"Examinations." This bogey seems to be slain.

At the Entrance Scholarship Examination of the Grammar School, 96 candidates chose for essay the subject: "Why do boys go to school?"

The analysis of their answers is as under:—

I. Compulsion, 12 (by law, 9; by parents, 3).
II. To acquire knowledge, 17.
To develop mind, 16.
III. To train bodies. 7.
IV. To prepare for future, 63 (get positions, 58; keep family, 2; teach, 3; inventors, 2; statesmen, 1).
To get on, make money, 7.

V. To acquire character, 0.
To learn manners, be disciplined, 15.
VI. To mix with others, 10 (friendship, 2).
VII. To serve country, be good citizens, 13.
VIII. To pass examinations, 6.

Note.—5 regard education as the cause or result of civilization.

These boys, as would be expected, do not ignore examinations. Several have grasped the idea that it is good to endure hardness, and bear the yoke in one's youth. There seems to be also a glimmering notion that the individual is, after all, chiefly important in his relation to the community. One boy of eleven hopes for "fewer slums, better houses" as the result of education: two speak specially of intercourse with other nations. One boy speaks of school as a preparation to meet temptation. One argument I found it impossible to classify: "That is why boys go to school to get their brains working so as to be able to argue, not to fight."

At the Grammar School, 583 boys took the questions. These I have classed according to the time they have been at the school. I excluded the higher forms, about 300 boys, because I was not sure that they would treat the thing seriously. The ages vary from nine to eighteen; there are very few under twelve or over sixteen.

	236 Boys up to 1 Year in School.	195 Boys 1–2 Years in School.	89 Boys 2–3 Years in School.	38 Boys 3–4 Years in School.	21 Boys 4–5 Years in School.	4 Boys 5–6 Years in School.
I. Compulsion	84	66	28	10	8	0
II. To acquire Knowledge	221	186	87	36	20	4
To Develop Mind	98	102	42	18	10	4
III. To Train Body	104	111	52	19	14	4
IV. To Prepare for Life	200	179	80	36	20	4
To Get On ...	32	24	12	5	3	0
V. To Acquire Character...	96	88	44	21	12	3
To Learn Manners and Discipline...	150	144	61	29	12	3
VI. To Mix with Others	93	93	54	20	9	2
Including Competition mentioned	(6)	(33)	(23)	(6)	(1)	
Friendship mentioned	(31)	(42)	(18)	(7)	(4)	(1)
VII. To Serve Country, &c.	63	69	35	20	12	1
VIII. To Pass Examinations	5	5	3	1	0	0

I shall content myself with pointing out in briefest manner the salient points in these papers. The most salient is the influence of the form master in evoking a finer and higher conception of the meaning of school life, especially as regards learning to be honourable and "play the game," as regards public spirit and the value of games as an expression of this spirit, and as regards the feeling of *noblesse oblige* in wearing the school cap. The Classical side is marked by a broader human sympathy than the Modern; that sympathy is for the most part still in embryo—it is vaguely expressed, but it is there. On the Modern side there is more of a perfectly lawful personal ambition; in very few cases is money thought of as the goal, but rather honour, a good name, and desire to rank well among educated and cultured people.

There is, throughout, appreciation of the value of discipline, of roughing it, of being made men, of getting accustomed to what one boy calls "rough justice"; and a clear conception that school is the preparation for days of greater conflict. Much higher value is placed on character than on habits, though these are not forgotten. All are naturally bigoted on the question of school *versus* home education: for the latter nothing good can be said. One or two flippant spirits avow frankly that they are giving reasons which their parents and teachers would expect them to give. One wag (æt. 10) says he goes to school because the school will not come to him. Most comforting of all to the pedagogue's mind is this: "Boys go to school that the teachers may have work, and not be forced to join the ranks of the unemployed."

A discussion followed, in which it was suggested that some of the answers quoted by Mr. Paton appeared to be echoes of what had been said to children by their teachers or relatives rather than expressions of the children's own sentiments. A vote of thanks to the lecturer concluded the proceedings.

REVIEWS.

A Famous Story-Teller.

George Alfred Henty: the Story of an Active Life. By G. Manville Fenn. (7s. 6d. net. Blackie.)

Mr. Manville Fenn has written a most interesting biography of his old friend and fellow story-teller, the late Mr. G. A. Henty, and sent it forth at the psychological season when Henty's stories are particularly in request. Many boys will learn with surprise the wide experience of strenuous labour in different parts of the world that went to the making of the numerous tales that Henty wove for their entertainment and instruction. To others, no longer boys, this record of Henty's life work will be very welcome. It is written with great sympathy and judgment. There are a dozen illustrations, chiefly portraits of Henty at different periods of his life, and the publishers have furnished it forth handsomely.

Though a very powerful man at his best, Henty was a sickly child, dosed through a large range of the Pharmacopœia, and especially with camphine (a refined petrol or paraffin), so that his doctor warned his nurse: "I don't say that if you put a light to the boy he will catch fire, but I advise you not to risk it." He was sent to Westminster School, where he laid the foundation of his prowess as a boatman, and afterwards to Caius College, Cambridge, where he added to the formal study of the place boxing and wrestling. It is interesting to note that he had little patience with those that decried the "dead" languages:

When I went out to the Crimea, and later to Italy, I found that everyday Latin [of Terence] invaluable. It was the key to modern Italian, and a very good key too. But, more than that, it meant that wherever I could come across a priest, I had a friend and an interpreter. Without my recollection of Terence, I don't know where I should have been when I first tackled life as a war correspondent.

A post in the hospital commissariat in the Crimea, with the rank of lieutenant, suggested his first opportunity of war correspondence, and led to his later appointment as organizer of the hospitals of the Italian Legion in 1859, and as head of the Commissariat departments at Belfast and Portsmouth (now with the rank of captain). Mr. Manville Fenn follows him in his work of war correspondent in the Italian War, in the Abyssinian campaign, in the Franco-German War, in Paris during the Commune, in the Ashanti campaign, in the Carlist War, in the Turko-Servian War, as well as in unwarlike expeditions to the mines of Carniola, to the opening of the Suez Canal, to India (on the tour of the Prince of Wales, now King Edward), and so forth. Amidst all the historical panorama, the personality of Henty is constantly prominent, and many good stories are incidentally told in illustration of the hero's characteristics. The panoply of a war correspondent is depicted, his difficulties and dangers; the conditions of the journalist on the staff of a great morning paper are indicated; and the writing of the stories is charmingly described, the auxiliary influences being noted from time to time. The variety and the quantity of Henty's work grow upon the reader and amaze him. As to his stories, Mr. Manville Fenn says—

Henty, in one acceptation of the term, was a great writer, who, with the assistance for a score of years of his swift-penned amanuensis, Mr. Griffith, sat down daily, not to write, but to call upon his wonderful imagination. This he supplemented by what he had seen, and when necessary by the study of history, and literally passed hours of what to him must have been intense enjoyment. Picture after picture of the past at these times floated before his brain as he set his young characters to work performing the manly tasks his brain suggested, otherwise there would never have been the reality, the variety, and above all the long series of entertaining and instructive works which have so largely aided the schoolmaster in Great Britain in the education of our youth.

"What do I call a good day's work?" said Henty. "Well, say my man comes at half-past nine in the morning and stays for four hours, till half-past one; we can get through a good

deal of work in that space of time. Then perhaps he comes round in the evening for a couple of hours; so in the course of a day I finish a chapter, that is, about six thousand five hundred words. I call that a good day's work." We should think so; and then to do it continuously! But it is curious to find a man of a hundred volumes, like Mr. Manville Fenn, declaring that "there is no saying how a man contrives to write a book."

GEOMETRICAL METHODS.

A Sequel to Elementary Geometry. By John Wellesley Russell, M.A. (6s. Clarendon Press.)

By the publication of his "Sequel to Elementary Geometry," Mr. Russell places within reach of the student of mathematics a treatise of exceptional educational value. It cannot be claimed that the subject-matter of the work is new; it is already well known, and has been both ably and fully treated by other writers. Nevertheless, the student could ill afford to miss the training which must result from the serious study of such a text-book as the present one, the manner in which many of the propositions are dealt with being marked by an individuality at once vigorous and stimulating. The place occupied by the volume amongst mathematical text-books is one of intermediate character, for, whilst on the one hand the book is concerned with geometrical propositions more advanced than those discussed by Euclid in those books of the "Elements" which are generally read, yet on the other hand a study of its pages should precede that of the author's "Elementary Treatise on Pure Geometry" or any similar work. Naturally the writer has made selections only from the vast store of material available for his purpose, and, without pronouncing definitely as to the accuracy of his judgment in believing that the portions of the material chosen by him are absolutely more useful and interesting to the reader than any others might be, it is quite possible so far to endorse his views as to agree that the contents of the volume are eminently suitable for a course of study of intermediate difficulty. The opening pages afford an excellent treatment of congruent and of homothetic figures, of the relationship between figures and their reflections both in lines and in points, of the principle of orthogonal projection, and of other allied subjects. The triangle is next discussed in connexion with its well known related points and circles, and, following the chapter devoted to it, is one bearing on the application of *sign* in geometry. Recent geometry receives but scant attention, being set aside in favour of subjects which the writer considers of more general utility. Harmonic ranges, harmonic pencils, coaxial circles, theorems on inversion, and other equally valuable themes are discussed at some length. Perhaps, too, it is well to mention the presence in the treatise of a chapter on applications of the theory of inversion, as for example Peaucellier's cell. The above extracts from the table of contents will show clearly the correctness of our previous statement, namely, that the individuality of the work does not lie in the nature of the matter treated—it is to be sought rather in the author's method. Constant reference is made by him to the analysis which underlies the synthetical proof of any proposition which he wishes to demonstrate. The student is continually invited to consider the nature of the successive steps which lead to establishing some desired result. The value of the training involved speaks for itself; the advantages offered cannot be too highly estimated. In classifying the subject-matter with regard to relative importance, Mr. Russell has clearly distinguished between fundamental and minor propositions. The former are proved as simply as possible in the body of the text; the latter are included amongst the examples, but the author marks their presence by the use of italic type (the mere rider being printed in ordinary characters) and by a brief indication of the method of solution to be adopted. Occasional instances of unsatisfactory language, and a few misprints, will be easily got rid of when a second edition is demanded.

GENERAL NOTICES.

CLASSICS.

The Comedies of Aristophanes. Edited, translated, and explained by Benjamin Bickley Rogers. Vol. VI.: *The Plutus;* to which is added, as a specimen of the New Comedy, a translation of the "Menaechmi" of Plautus. (8s. 6d. Bell.)

The characteristics of previous volumes of Mr. Rogers's great enterprise are fully manifest in the present instalment. The meaning is grasped with insight and re-expressed in vigorous and buoyant verse, reflecting with remarkable accuracy the spirit of the original. Both the introduction and the notes are adequate, and both are marked in detail alike by scholarship and by good sense. The translation of the "Menaechmi," also in verse, is intended "to give the English reader a clear idea of the difference between the New Comedy which Aristophanes inaugurated in the Cocalus and the Old Attic Comedy represented in these volumes"; and, whatever the real origin of the play, it "exhibits in a marked degree the general characteristics of the New Comedy." It is a very welcome appendix. Mr. Rogers follows Hildyard's edition.

The Ajax of Sophocles. With a Commentary abridged from the larger edition of Sir Richard C. Jebb, Litt.D. By A. C. Pearson, M.A. (4s. Cambridge University Press.)

Mr. Pearson has followed the lines of adaptation worked upon by the late Dr. Shuckburgh in previous plays. The task is by no means an easy one; but he has retained all that is practically useful to younger students, and perhaps (to err on the safe side) a little more. The introduction, the metrical analysis, and the outline of the structure of the play, will be very helpful, while the notes are amply explanatory and suggestive. There are also the usual full indexes, Greek and English. Both teachers and students are to be congratulated on this admirable school edition of Sophocles.

MATHEMATICS.

The Geometry of the Screw Propeller. By William J. Goudie, B.Sc. (1s. 6d. net. Blackie.)

The pamphlet promises to be of much value to the engineering students of technical schools, for whose use it is chiefly intended. It is, in fact, a reprint of a series of articles that appeared in *Technics.* It is printed in good type and profusely illustrated by clearly drawn diagrams, some of which are very effective, whilst others call for close examination owing to the necessarily small scale on which the details have been reproduced. The author's descriptions of the geometrical properties of the helix and of the principle of the screw surface are easily followed, and are given in an interesting manner. These are followed by detailed instructions for the making of drawings and for the construction of models.

Graduated Exercises in the Metric System. By A. W. Wise, A.C.P. (Part I., 2d.; Part II., 3d.; complete, with Answers, 6d. Ralph, Holland, & Co.)

A useful compilation, which will be welcomed by teachers engaged in giving class lessons on the metric system. The exercises are numerous and graduated in difficulty. They are constructed so as to involve practice in the various rules of ordinary arithmetic, and they supply material for both oral and written work. A very brief introduction bears on the nature and origin of the system and on the units employed. Published both in separate "Parts" without answers and complete in one volume with answers, the little work may be easily adapted to class purposes.

EDUCATION.

The substance of an address delivered to the London Trades Council in June last, by Mr. A. A. Thomas, Standing Counsel to the National Union of Teachers, on *The Education of the Workers' Children,* has just been printed in pamphlet form by the National Union of Teachers (1d.). Mr. Thomas, who has been a teacher, points out that the conditions laid down by the Board of Education for elementary and secondary schools differ very considerably. Thus, the secondary school must contain a library, dining hall, music rooms, gymnasia, and playing grounds, whereas none of these things may be provided for elementary schools. He further considers that from 8 to 10 square feet of floor space for each child in elementary schools is far too small, and suggests that this should be extended to at least 16, 17, or 18, as in the secondary schools. A striking table is quoted, showing how the grants from the Science and Art Department have been gradually diverted from the industrial classes, for whom they were primarily intended. Mr. Thomas has a word of warning with respect to the danger of treating the children in the elementary schools as mere labour machines, his own experience in various classes of schools leading him to believe that ability is vertically distributed throughout all grades of society, and that the State loses by not drawing upon the whole mass for leaders of thought and action. A thoughtful paper, deserving to be widely read and considered.

Messrs. Truman & Knightley, educational agents (6 Holles Street, Cavendish Square, W.), publish at the nominal price of sixpence *A Practical Guide to Schools, Tutors, and Educational Homes for Boys and Girls in Great Britain and on the Continent*—a thick volume of some 500 close-packed pages of information. The schools are classified according to their nature, and each class is arranged in groups according to locality or special objects. Thus, the girls' schools are (1) those charging over £70 a year initial fees for boarders, (2) those charging not more than £70, (3) small home schools and families receiving girls for special care and education, (4) schools for special training of ladies, and (5) schools and private families on the Continent receiving girls as boarders. The boys' schools are similarly disposed in a practical

classification. There are many hundreds of schools mentioned, with a great deal of systematic information about them; and, the publishers state, "a large number" of them "have been inspected by a member of the firm." The compilation is sure to be very serviceable to parents and guardians that need guidance of the kind provided.

RELIGIOUS AND MORAL.

The Cambridge University Press has just published a new and cheaper edition of *The Interlinear Bible*: "the Authorized Version and the Revised Version, together with the marginal notes of both Versions and central References." We noticed the original issue in October, 1906; and the only difference is that the present edition is not printed on India paper. It will be a great boon to very many readers and students. The price is only 7s. 6d. net.

SOCIAL QUESTIONS.

"Social Problems Series."—No. 5, *Woman's Suffrage*. By Arnold Harris Mathew. No. 6, *The Citizen and his Duties*. By W. F. Trotter, M.A., LL.M. No. 7, *Socialism*. By J. Ramsay Macdonald, M.P. (1s. net each. Jack.)

Mr. Mathew ("*de jure* Earl of Landaff") believes that the question of women's rights "is not a passing craze," but "rather in the very nature of things"; and he handles it historically and argumentatively with much ability and force. The course of history, he says, "indicates that the rights of women have for long periods been better established than they are now; that during times of national stress this right has been formally taken from women; and that the tendency has been within our own epoch to break down these arbitrary barriers point by point, and to restore woman to her original footing once more." The opposition, male and female, is dealt with in detail, Miss Corelli and Mr. Labouchere being specially chastised. The handling is full and instructive, if the sallies of the suffragettes would but allow one to read it in peace.

Mr. Trotter's book forms a general introduction to the series, although for one reason or another it has not come first to publication. After considering the nature of the State and of the Government, he divides his subject into two parts—the legal obligations incumbent upon a British citizen and the duties that are left undefined by the law. The treatment is most capable and judicious; and it incidentally conveys much useful information on many points, and indicates many considerations that have to be reckoned with, although they are apt to be overlooked by the uninstructed.

Mr. Ramsay Macdonald's exposition still leaves us unsatisfied. What is Socialism? "Socialism is a theory of social organization which reconciles the individual to society." "Economic sovereignty cannot be safely given to individuals, but should belong to society organized, so that by a system of co-operative industrial effort the individual may be freed from the possibility of economic slavery and may share in the benefits which increasing economic advantage brings." "The Socialist objective is a State wherein labour will meet with an adequate reward and human life be valued above property." The definition, if we mistake not, is left to be gathered from such vague occasional statements. Mr. Macdonald outlines the history of the general movement, deals with the economic argument, answers certain particular objections, and glances at the future. One way and another, he furnishes much useful matter and suggestion; but his main thesis would have been more effectively presented if he had realized more vividly that his opponents take nothing for granted, and that the subject demands very definite and precise handling. Existing conditions may be bad, but it is not proved that "Socialism" is the indispensable cure, or indeed a cure at all, except in so far as such mild enterprises as municipal gas, tramways, and like undertakings come under the dread name.

The A B C Annotated Bibliography on Social Questions, by S. E. Keeble (1s. net, C. H. Kelly), is a roughly classified list (with brief descriptive notes) of some 350 books, the best for beginners being indicated. It disclaims completeness and scientific arrangement, but it will be practically useful as a preliminary guide to students ignorant of the wide and perplexing field.

DIARIES AND ALMANACKS.

Messrs. Cassell offer specimens of their well known *Letts's Diaries*: No. 8, two days to a page, for the office table (5s.); No. 17D and No. 21D, a week to a page, different sizes for the pocket (1s. net each); No. 26, a week to two opposite pages, interleaved, also for the pocket (1s. 6d. net); No. 31, a week in an opening, plain (1s. 6d.); No. 36, a week to a page (1s.); and No. 75, a week to a page, in leather, with back loop (2s. net). Each of them has more or less general information prefixed (except No. 75, which has only a calendar for 1908), and a £1,000 insurance coupon enclosed.

Pitman's Shorthand and Typewriting Year-Book and Diary for 1908 (1s.), a week to a page, has some 200 pages of general information prefixed, mainly on the subjects mentioned in the title.

The "People's Friend" Almanack (1d., Leng) contains, besides calendars for 1908 and 1909, a great variety of practical and interesting matters: a very liberal pennyworth.

CHRISTMAS BOOKS.

ROMANCE OF HISTORY.

Rob the Ranger, by Herbert Strang (6s., Henry Frowde and Hodder & Stoughton), is a stirring story of the fight for Canada, bringing into relief the romantic side of the great struggle, and showing the author's keen observation, rapid and lucid narration, and clever construction at their best. Rob is the son of an English settler in New York State, whose home has been destroyed, and his brother carried off, by raiding Indians. With Lone Pete, a trapper, he goes in pursuit, but is captured and taken to Quebec, where he finds his brother in strange circumstances. Escaping in the dead of winter, in company with a handful of New Englanders, they eventually fall into desperate conflict with a larger force of French, Indians, and half-breeds, and at last reach Fort Edward. The main part of the rest of the volume is occupied with Wolfe's military proceedings. There are eight illustrations in colour by W. H. Margetson, a map of the country between Albany and Quebec, and plans of the attack on Ticonderoga and the siege of Quebec. The book, we anticipate, will be quite as popular as any that Mr. Strang has yet written.

With Drake on the Spanish Main is yet another stirring story of adventure by sea and land, by Herbert Strang (5s., Henry Frowde and Hodder & Stoughton). The hero, Dennis Hazelrig, wakes up one fine morning to find himself the sole survivor of a band of adventurers: "What had become of the *Maid Marian* and her crew and his companion adventurers on board?" All gone, and he a solitary castaway upon an island of the Spanish Main. After a period of fraternization with a spider-monkey, he gradually gathered together another band—escaped slaves and prisoners of various nationalities—and proceeds to fight Spaniards on land and on sea. Meeting Drake, he joins him in his Panama adventures, and of course accumulates abundance of treasure. The variety and energy of the incidents will carry the reader on rapidly; and the characters are strongly marked and delineated.

With Wolseley to Kumasi, by Captain F. S. Brereton (6s., Blackie), is a graphic tale of the first Ashanti war. Dick Stapleton, a young Englishman, manager of a gold mine near Kumasi, makes a spirited defence against a native attack, escapes down the Pra river, runs against an Ashanti army, narrowly evades capture, reaches the coast, joins the British expedition, and takes part in the advance on and capture of Kumasi. The multifarious adventures of the hero furnish ample scope for strong situations and exciting incidents, and there is much interesting information regarding the special difficulties of war with a savage enemy in a jungle country, though such details are kept firmly in subordination to the story. Incidentally we note that Captain Brereton signalizes among the war correspondents "the familiar figure of G. A. Henty, whose name must be well known to thousands and thousands of boys and grown men, and whose active brain created heroes in every country and clime under the sun." Eight illustrations by Gordon Browne, R.I., and a map of the Gold Coast showing the route of the expedition.

Jones of the 64th is another military tale from the facile pen of Captain Brereton (5s., Blackie)—"a tale of the battles of Assaye and Laswaree," of the campaign in which Wellesley and Lake broke the power of the Mahrattas. The hero is an orphan boy—"a foundling with a mysterious tale behind him, and of late a little slave"—who becomes a band boy in the 64th, works hard, and behaves well, is promoted to a commission in an Indian cavalry regiment, and after various moves joins General Wellesley's force and gains glory in the furious cavalry charges at Assaye. Detailed for special service, he is captured by Holkar, "the treacherous Mahratta chief," but effects his escape by a daring expedient, and fights at Laswaree with General Lake's force. The story is full of action and is vividly told. Six illustrations by W. Rainey, R.I., a map of India in 1803, and a plan of the battle of Assaye.

When Lion Heart was King, by Escott Lynn (3s. 6d., Blackie), is a tale of Robin Hood and Merry Sherwood, a subject that always takes the youthful fancy. Wilfrid de Lacy, a stripling of seventeen, ousted from his lordship of Slingsby by his uncle Sir Guilbert, seeks Robin Hood in Sherwood Forest, and is duly received into his protection. Will Scarlet and some other outlaws have been captured by the sheriff and lodged in Nottingham Castle dungeons, and this affords a fine opportunity for the dangers and excitement of an attempt at release, Robin bearding Prince John in the castle, and a grand fight ensuing; and later Robin encounters Richard the Lion Heart, and assists him to capture the castle. Sir Guilbert, a friend of John's, shuts himself up in Slingsby Castle, which accordingly must be besieged; and no doubt justice is done on the usurper. The political, military, and social conditions have been carefully studied and instructively worked into the story without embarrassing it; and the life in the merry green wood is very interestingly depicted. The youngsters will like this book. Six illustrations by William Rainey, R.I.

(*Continued on page* 539.)

OXFORD UNIVERSITY PRESS.

THE OXFORD GEOGRAPHIES.

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The House Prefect, by Desmond Coke (5s., Henry Frowde and Hodder & Stoughton), introduces the reader to the life at Sefton-upon-Sea, a great public school. The hero joins two of the wilder spirits of the school in whitewashing a local statue by night and damaging certain school property; and, when he is made a house prefect, he finds this escapade not a little embarrassing, as his new duties require him to control the waywardness of his fellow culprits. The difficulties are worked out in much interesting detail, in the studies, in the dormitories, and in the field. Whether the prefect is delivered from his false position, and, if so, how, and with what results, we will leave to the discovery of the ingenuous reader. There is plenty of incident in the working out of the complication, and the story goes with verve. Six illustrations in colour by H. M. Brock.

The Pretenders, by Meredith Fletcher (3s. 6d., Henry Frowde and Hodder & Stoughton), is a tale of twins—the one a boarder of a year's standing, the other a new day-boy, at Daneborough School. The day-boy, naturally a harum-scarum youngster, has been ill, and

(*Continued on page* 542.)

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more or less spoilt; and his vagaries soon get his more sober brother into pretty hot water. The brilliant notion of changing places for a night leads to a culmination of troubles, with a humorous as well as a grave side. It is a brisk and bustling story. Six illustrations in colour by Harold Earnshaw.

Two Scapegraces, by Walter Rhoades (3s. 6d., Blackie), is a lively and varied sketch of certain phases of school life. Holland, a boy of some standing in the school, has a friend Dormer, who makes himself useful to Holland in bookwork and otherwise, but who takes offence at the chumminess that develops between Holland and a new boy, Bathurst. Dormer at last succeeds in setting the other two at variance, by fixing upon Bathurst a charge of dishonourable conduct towards Holland. Of course there is a fight over it, but the result does not settle matters—further adventures are necessary for that. Between the miscellaneous escapades of Holland and Bathurst, their friendly rivalry in school sports, and their furious quarrel engineered by Dormer, there is no lack of moving incident. Six illustrations by Harold Copping.

The Willoughby Captains, by Talbot Baines Reed (3s. 6d., Henry Frowde and Hodder & Stoughton), is a capital story, which we welcome in a new edition, with illustrations in colour by Harold Earnshaw.

Dr. Joliffe's Boys, a tale of Weston School, by Lewis Hough (2s. 6d., Blackie), appears in a new edition. It is a bustling story with an ample share of characteristic incidents; the tone is manly, the characterization vigorous, and the style fluent. Six illustrations.

Stories for Girls.

Teddy: Her Book, by Anna Chapin Ray (3s. 6d., Henry Frowde and Hodder & Stoughton), is "a story of sweet sixteen," with half a dozen illustrations in colour by Robert Hope. "Teddy" is Theodora, daughter of Dr. McAlister, one of five—an impulsive, self-willed, and vigorous girl, with three ambitions: to possess a bicycle, to go to college, and to be a successful author. Moreover, she is on very friendly terms with Billy Farrington, a boy of her own age, who is an invalid by reason of a bad accident, and is under the medical care of her father; and possibly thereout may arise yet another ambition. The working out of the story involves some stirring incidents. "It has been a terrible month," said Hope; "after our years of placid existence, it seems as if a cyclone had struck us all at once." Miss Ray's writings are said to enjoy great popularity in America, and this volume has just enough transatlantic flavour to give it a certain piquancy.

Janet: her Winter in Quebec is another story by Miss Anna Chapin Ray (3s. 6d., Henry Frowde and Hodder & Stoughton)—matters of domestic interest tempered by local adventures. "Janet Leslie was a girl, and entirely human"; and, "being that, she could not fail to be irritated by Day Argyle," who was "a wideawake, tempestuous American girl." The Argyle family, wealthy New Yorkers, had come to board with their relatives, the Leslies—Mrs. Argyle's cousin had married Mrs. Leslie's sister-in-law; and the Leslies had seen better days, the father of the family having died and left them but meagrely provided. Each of the girls has a brother. There are misunderstandings that furnish material for the domestic side of the story; and there are adventures in the citadel, and on the ice and elsewhere; and there is an eccentric Englishman, Sir George Porteous, who is made sufficiently ridiculous and futile, but eventually succeeds in making himself useful. The rapid fire of question and answer, after the manner of Victor Hugo, gives a certain briskness, though sometimes it serves to spin out trifles, and to suggest the virtue of compression. Six good illustrations in colour by Gordon Browne.

Nina's Career, by Christina Gowans Whyte, who won the *Bookman's* £100 prize for the best girl's story last year, is a charming story of a large family of boys and girls, the children of Sir Christopher Howard, a famous surgeon. Contrasts of life, and of ideals of life, are sharply limned, and different practical interests of girls are illustrated. The story is happily touched with humour, as well as furnished amply with incident, and the style is good. Eight illustrations in colours by James Durden. The publishers are Messrs. Henry Frowde and Hodder & Stoughton (6s.).

Sisters of Silver Creek, by Bessie Marchant (5s., Blackie), is a story of Western Canada—of sisters three, who have emigrated, on the death of their mother, to live with their Uncle Ben, who is going to leave them his heirs. On arrival, however, they find that Uncle Ben is dead, leaving nothing but his house and land, the money (if any), being a missing. They are charming and sensible girls, and they face the difficulties of their situation with spirit and resolution, stoutly maintaining their independence and conquering contentment. Whether the missing wealth (if any) is ever found may be of interest to the reader, but the sisters had found their happiness independently of it. The story is most carefully and delightfully worked out, and it is well written. Perhaps Miss Marchant has never yet in any of her many volumes excelled the interest and charm of the present story. Six illustrations by Robert Hope.

No Ordinary Girl, by Bessie Marchant (3s. 6d., Blackie), is a tale of Central America. Daisy Kennard, "a slight, graceful maiden, with a wealth of golden hair and a pair of earnest dark blue eyes," carries off the gold medal of the year at Montebello College, Quebec, and obtains an appointment as teacher in Panama City, where sixteen years before her father had lost his life in vainly attempting to save a child from drowning, and her mother had died of grief three weeks later. At Panama she recognizes a locket, shown her by a sailor cousin, as that of a sister that disappeared mysteriously in infancy; and most of the subsequent events are connected with her efforts to discover this sister. There are adventures in the mountainous interior, and alternations of sorrow and joy. The story is well thought out, continuously interesting, and written with taste and with much *verve*—a delightful story. Six fine illustrations by Frances Ewan.

Pamela's Hero, by Dorothea Moore (2s. 6d., Blackie), is a tale of the Gordon Riots, in which the principal personages are more or less involved. The disturbance is depicted in considerable detail in the course of the story, which, however, will probably appeal to younger girls more as story than as history. They will follow it with sustained interest. Four illustrations by Arthur A. Dixon.

Silver Mill, by Mrs. R. H. Read (2s., Blackie), is a tale of the Don Valley. This is a new edition, which indicates the success of the story. The mystery of the heroine's origin and the development of her character form elements of strong interest; and the book is inspiring and elevating. Three illustrations.

The Heart of Sylvia, by Florence Bone (2s., S.P.C.K.), is a story of the Yorkshire moorland, with illustrations in colour by Adolf Thiede. It "shows the power of a child's natural influence for good over two young guardians, and the ultimate happiness brought about by a girl's self-sacrifice." But the tale is diversified, the incidents are naturally disposed and briskly narrated, and there is no forcing of the moral. A well-written and very agreeable story.

The Story of Dorothy, by L. E. Tiddeman (2s., S.P.C.K.), tells of "a girl's loyalty to her old grandfather, her friendships, failures, triumphs, some really exciting adventures, and a mystery." The old man is a miser (of a sort), and a rascal that has experienced Dorothy's kindness wants to get at "the hidden treasure." But there are many other points of interest besides the fate of the money. Illustrations in colour, by Harold Piffard.

Stories for Children.

Blackie's Children's Annual (3s. 6d.) is now in its fourth year of issue, and we regard it with much favour because it has had the grace to justify our anticipations year after year. The stories and rhymes are by writers that have proved their capacity to amuse children, and the designs and drawings are provided by a force of competent artists. Naturally and properly, a note that has once charmed is touched again, as in the new stories about Wee-Wun the Gnome; but otherwise the matter is fresh in substance and in treatment. The editor really tries to give the youngsters his best, and that is a virtue that the youngsters are prompt to recognize. We must leave readers to count the coloured plates and other illustrations for themselves: they are profuse, appropriate, and good.

The Little Guest, by Mrs. Molesworth (4s. 6d., Macmillan), tells how a small girl, whose father was "somewhere in the East," whose mother was dead, and whose aunt also died while staying with her in Germany, was taken in charge by an English lady, who was sojourning in the same hotel with several children, her husband being away in China. Both in Germany and again in England, the characters of the children are displayed in their simple intercourse, the most piquant contrast being between "the little guest," and one of her host's younger children. Incidentally, there is a long story of "the lonely gnome." The tale proceeds by way of quiet interest, but towards the end there is some excitement over "a most extraordinary thing." It is all in Mrs. Molesworth's usual manner, and will no doubt be a great favourite. Eight illustrations by Gertrude Demain Hammond.

The Story of the Weathercock, by Evelyn Sharp (6s. net, Blackie), is a very handsome volume, with 16 coloured plates, and more than 160 black-and-white illustrations by Charles Robinson. It tells much of what the Weathercock saw and said in his exalted station, and much about the children and other personages (including other cocks) that looked up at him. The stories are interestingly devised and told, not without many pretty touches of fancy. The children will be delighted with the volume.

The Children and the Pictures, by Pamela Tennant (6s., Heinemann), presents a score of famous pictures beautifully reproduced by Hentschel-Colourtype, with stories woven about them. Lady Tennant contrives to impart varied interest both in incident and in style. Whatever else may be the outcome of the artistic suggestions, the children will be charmed alike by the stories and by the pictures. The volume is furnished forth with great liberality, and is sure to be a favourite.

The Reign of the Princess Naska, by Amelia Hutchison Stirling, M.A. (1s. 6d., Blackie), well deserves the honour of a new edition. It is an amusing yet pathetic story of the ten-year-old sovereign of the small principality of Tsarkovia, the vagaries of court etiquette, and different views of justice. Over fifty illustrations, chiefly insets, by Paul Hardy.

The Story of Scraggles, by George W. James (Chatto & Windus), is a short account of the civilized life of a tiny song sparrow, which the Professor picked up in the street, wounded and unable to fly, and took home with him and tended. The author tells us that, on the recital of the story in a lecture, "thousands were touched to tears by the simple narrative of the sweet little bird's beautiful and trustful life." We will not inquire how far he has projected his own tender moods on his *protégé*. It is a kindly story. Six illustrations from drawings by Sears Gallagher and from photographs.

The Rhyme of a Run and other verse for children (6s. net, Blackie) is both written and illustrated by Florence Harrison, and will have an interest for others that have outgrown the nursery. The rhymes run on easily, without limping—which is saying a great deal, though it does not seem to be saying much; and there is many a quaint fancy, recalling the style of the classical nursery jingles. There are twenty-four drawings in rich colour, beautifully reproduced and mounted on grey art paper, and there are many fine text and line drawings besides. The volume is artistic at every point, as well as unusually original and sumptuous.

Gammon and Spinach, with twenty-four pictures in colours by Stewart Orr, verses by John Brymer (3s. 6d., Blackie), has won popularity enough to appear in a new edition. To the children that have not yet seen it, the adventures of the frog, the pig, the mouse, the elephant, and other animals will be as good as new. It is an interesting book, with its droll stories in verse, and its impressive and deftly coloured illustrations.

Sambo and Susanna is a similar work, with 24 full-page pictures, bold in drawing and in colour, by Ethel Parkinson, and explanatory verses by May Byron (3s. 6d., Blackie). The adventures of the "two little picaninnies," who went out into the world to seek their fortunes, are sufficiently amusing, in spite of occasional dangers. Sometimes, no doubt, they took a wrong turning, but of course they reached their goal at last, and lived happy ever after.

Our Happy Holiday is also in the same strain—24 large pictures in full colour by G. F. Christie, with stories by Sheila E. Braine (2s. 6d., Blackie). It is a bright book, describing and illustrating the games played during a summer holiday by a number of bright boys and girls. There is plenty of variety and interest.

Doggy Doggerel, "being Nursery Rhymes for Doggy Times," written by Emily Westrup and pictured by E. Kate Westrup (2s. 6d., Blackie), is all about dogs and puppies, and therefore interesting to all youngsters. The verses are adaptations of well known nursery rhymes to suit the escapades of the doggies. There are 24 clever full-page pictures in liberal and varied colour, and 24 vignettes in black-and-white.

Amy's Wonderful "At Home," verses by W. Gurney Benham, pictures by Hervey Elwes (1s. 6d.); *More Nursery Rhymes*, illustrated by John Hassall (1s.); *Our Wonderful World*—Nature stories for children—by Alice Talwin Morris (1s.); and *My Book of Brave Men* (1s.): these are all very simply written and liberally illustrated samples of Messrs. Blackie's Christmas provision for the entertainment and instruction of the little ones.

VARIOUS.

The Romance of Savage Life, by G. F. Scott Elliot, M.A. Cantab., B.Sc. Edin., &c. (5s., Seeley) describes "the life of primitive man, his customs, occupations, language, beliefs, arts, crafts, adventures, games, sports, &c. &c.," and has 45 illustrations. The various activities of savages of every grade are grouped and illustrated, so as to picture the earliest conditions of man: "he began almost as a brute beast, and he lived more like a rat on the sea-shore than as a human being," and Mr. Scott Elliot traces his circumstances, thought, and action in the period of his development to his emergence from the savage state. The volume brings together a vast amount of well-selected information, and is full of interest.

The Brushwood Boy, by Rudyard Kipling (6s., Macmillan), is a somewhat distinctive story. It may be that more boys (and girls) than we bargain for are brushwood boys (and girls), capable of tracing the subtle lines of association connecting the earlier and the later events of this verisimilitudinous narrative, physiological, psychological, psychical, telepathic, scientifically imaginative. Children must be of rather advanced growth to appreciate the details and the bearings of the hero's military experiences in India; and the conduct of Mrs. Zuleika might have been made to satisfy the *dénoûment* without such close adherence to what is doubtless historical fact. The story, it must be admitted, is an extremely clever performance; but it is of the nature of a perplexed and disagreeable dream: for all its cleverness it leaves an uncomfortable impression. There are about a hundred well-spaced pages of it, the second page of each leaf being left blank. Twelve excellent illustrations in colour by F. H. Townsend.

The Playmate, by Charles Turley (5s., Heinemann), tells the varied experiences of a good-natured gentleman with his six godchildren—three boys and three girls. They form a club, and have great doings out of doors as well as indoors, and they run a club *Chronicle*. The activities of the children are ebullient and interesting, whether in playing soldiers or playing cricket, in peaceful or in warlike expeditions. The advent of the man from Alaska, six foot three in his stockings, and unconventional and decisive in his actions, brings the interest briskly to its highest stage. The story is worked out very cleverly, with abundance of incident and humour, and the dialogue is remarkably brisk and suited to the characters. We are inclined to think that Mr. Turley has excelled his previous successes. Numerous illustrations and coloured frontispiece by H. R. Millar.

"Pip," by Ian Hay (6s., Blackwood), is "a romance of youth," in three stages, with "an interlude" of a somewhat detached character, though brisk enough, in the second. The earlier chapters deal with school experiences in considerable variety, including incidents both serious and amusing; and the first stage conducts Pip to a Cambridge cricket blue. The death of his father, however, leaves him and his sister with but a very moderate provision; so he accepts "a humble and oleaginous appointment at the Gresley Motor Works in Westminster Bridge Road," and becomes "an *habitué* of those establishments which are so ably administered by Lord Rowton and Mr. Lockhart," thus obtaining "an insight into the workings of the proletariat mind." It is as a chauffeur that he takes part in the amazing "interlude." The final stage settles up the inevitable love affair—a settlement prepared for by his admission as a partner at Gresley's. There is plenty of sport in the book—cricket in the first two stages and golf in the third. The author relies more upon rude vigour than upon artistic conception of the whole and of the details—a sign of inexperience that will probably not trouble the boy reader, who will vote Pip, like another Pip we wot of, a very fine fellow.

Bingle's Widow, by Mrs. Philip Barnes (1s., S.P.C.K.), is an East-end story, sweet as well as bitter, told dramatically and with fine feeling. The life in the crowded alley is contrasted with the olden time in the open country. Bingle, who had been a fine, strapping lad, "got 'isself killed" with drink in him, and Mrs. Bingle was left to struggle on with a grandson. "She may be plain, pore dear, an' she may be pore, but she's a blessed angel, and there's many more can prove my words." A charming little story.

The Experience of Isabel, by A. E. D. (1s. 6d., S.P.C.K.), exemplifies and censures "the increasing disregard of Sunday amongst all classes, and the excess to which the playing of bridge is being carried at all times and seasons." "I gambled and I took money that did not belong to me, and I played cards on Sundays," sobbed Isabel in a fit of remorse. At last, "No more bridge for me!" Illustrations in colour by Harold Piffard.

Crags of Duty, by Emilie Vaughan Smith (1s. 6d., S.P.C.K.), illustrates the gradual discipline of a somewhat intractable disposition. "The scene was a great London Pupil-Teacher Centre" on the eve of prize-day and break-up at Midsummer. But presently the claims of a poor home come in, and the conflict of desires and possibilities. And through it all is the figure of a youth that eventually glories in the promise of "a post on the staff of the *Morning Mail*." The trials of the story are patiently and interestingly worked out. Illustrations in colour, by Harold Piffard.

All about Philippine, by Philip Carmichael (2s. 6d., Methuen), narrates the young lady's history from the time that Straddles saw the doctor bring her "in his bag" to her first journey to the seaside—no immense period of time, yet enough to raise many curious questions. The author naturally thinks that he has "proved to every fair-minded man's satisfaction that Philippine is the most remarkable baby that ever was born," and he knows (to his own satisfaction) "that she is the most lovable." We do not know whether that was the opinion of the elderly gentleman that travelled in the same compartment, but we are not inclined to dispute the point. The reader will judge for himself—or herself. Eight illustrations.

The Ups and Downs of Lady Di, by Annette Lyster (2s., National Society's Depository), describes the spoiling of Lady Di and the taming of Lady Di, Lady Di's plan and Ida Hunt's plan, and how things got tangled and disentangled. The story goes briskly, and it is well written. Two illustrations by Isabel Watkin.

The Cottage on the Downs, and half a dozen other stories, by Katherine E. Vernham, with two illustrations by Isabel Watkin (1s. 6d.); *Elizabeth's Angel*, and ten other short stories, by Dorothea Moore, with frontispiece by Isabel Watkin (1s.); and *Four Little Folk and some of their doings*, by E. L. S. (1s.): these are all interesting and agreeable new story-books for the young, published at the National Society's Depository.

MATHEMATICS.

16223. (T. Stuart, M.A., D.Sc.)—Show that there is a doubly infinite series of numbers of the term X^8+Y^8 which are algebraically resoluble into two factors; and find the general forms of X and Y when this is possible. Factorize 5^8+17^8, 19^8+7^8, 19^8+23^8, 29^8+25^8.

Note on Factorisation of $N = x^8+y^8$ (see Question 16223 above).

By Lt.-Col. Allan Cunningham, R.E.

The writer introduced a highly general method before the London Mathematical Society, on January 11th, 1900, for factorization of $N = x^4+y^4$ and other quartic functions, which takes the following form when applied to 8-vans, ($N = x^8+y^8$). Write

$$N = (x^4+Cy^4)^2-y^4\{2Cx^4+(C^2-1)y^4\}$$
$$= P-Q^2, \text{ a difference of squares [which involves N odd]},$$

if $$2Cx^4+(C^2-1)y^4 = z^2, \text{ a perfect square} \quad \ldots\ldots\ldots\ldots(1).$$

To find values of C for which this Diophantine is solvable, any odd 8-van number (N_0) whatever when resolved (in any way) into a difference of squares ($P_0^2-Q_0^2$) will suffice to yield four suitable values of C when N_0 is prime (and more if N_0 is composite). Let

$$N_0 = x_0^8+y_0^8 = P_0^2-Q_0^2, \ [N_0 \text{ odd}].$$

Then $$x_0^4+Cy_0^4 = \pm P_0, \quad C = (\pm P_0-x_0^4)/y_0^4, \quad z_0 = Q_0/y_0^2 \ldots\ldots\ldots(2).$$

Here are two values of C; but as x_0, y_0 are interchangeable in N_0, two more values are given by

$$y_0^4+Cx_0^4 = \pm P_0, \quad C = (\pm P_0-y_0^4)/x_0^4, \quad z_0 = Q_0/x_0^2 \ \ldots\ldots(2a);$$

but the symbols x, y must not be interchanged in the general formula.

Each of these values of C leads to a solvable form of the Diophantine (1). The base-solution (x_0, y_0, z_0) being known, leads to an infinite series of solutions of each of the Diophantines: the next solution being [for the values of C given by (2)]

$$x_1 = x_0^4 \sim Cy_0^4, \quad y_1 = 2x_0y_0z_0, \quad z_1 = z_0^4+4Cx_0^4y_0^4 \ \ldots\ldots\ldots(3).$$

Similarly x_2, y_2, z_2 may be found; and so on, *ad inf.*

Ex.—Take $$N_0 = 1^8+2^8 = 257 = 129^2-128^2.$$

The four values of C are $+8$, $-\frac{65}{4}$, $+113$, -145. Taking $C = 8$ (given by $x_0 = 1$, $y_0 = 2$, $z_0 = 32$) leads to

$$(2x)^4+63y^4 = 32^2, \quad \text{or} \quad x^4+63(\tfrac{1}{2}y)^4 = 8^2.$$

The next solution [see (3)] is $x_1 = 62$, $y_1 = 32$, $z_1 = 17392$. Or, cancelling 2 from x, y and 4 from z; $x_1' = 31$, $y_1' = 16$, $z_1' = 4348$. Hence

$$N_1 = 31^8+16^8; \quad P_1 = 31^4+8\cdot16^4 = 1447809, \quad Q_1 = y_1'^2z_1' = 1113088,$$

so that $N_1 = (P-Q)(P+Q) = 334721 \,.\, 2560897 = 334721\,(17 \,.\, 97 \,.\, 1553)$.

The next solution (x_2, y_2, z_2) runs into high numbers.

It will be seen that the above method applies (in detail) only to odd 8-vans (one of x, y odd, one even), because the form $N = P^2-Q^2$ involves N odd (*i.e.*, if P, Q are to be integers); but, by taking $P = \frac{1}{2}P'$, $Q = \frac{1}{2}Q'$ (where P', Q' are odd integers), it can be applied also to even 8-vans (x, y both odd). The method itself is however equally applicable to the resolution of N into each of the following 2-ic partitions (whether N be odd or even)

$$N = a^2+b^2 = c^2+2d^2 = e^2 \sim 2f^2.$$

In each case a 4-ic Diophantine similar to (1) arises, viz.,

$$2Cx^4+(C^2-1)y^4 = -z^2, \text{ or } -2z^2, \text{ or } +2z^2.$$

Suitable values of C (to render the Diophantines solvable) may be found by taking any 8-van N_0 whose (a, b), (c, d), or (e, f) is known; even the algebraic partitions of N_0, viz.,

$$N_0 = (x_0^4)^2+(y_0^4)^2 = (x_0^4 \sim y_0^4)^2+2(x_0^2y_0^2)^2 = (x_0^4+y_0^4)^2-2(x_0^2y_0^2)^2$$

will suffice. And each of them will yield four suitable values of C.

The above methods have the advantage of great generality, inasmuch as any 8-van whatever suffices to yield solvable Diophantines. They have the practical drawback of running almost at once into very high numbers.

Remarks on Dr. T. Stuart's Method of Factorization of 8-vans (see Question 16223 above).

This method has the great advantage of involving only 2-ic Diophantines ($14\theta^2-31\phi^2 = z^2$ or $2z^2$) instead of 4-ic Diophantines (as in the writer's methods). The two 2-ic Diophantines arrived at appear however to be quite special (not general). It would be a great advantage if a method could be found of producing such 2-ic Diophantines in some general manner for the case of 8-vans.

16292. (*Communicated by* H. MacColl, B.A.)—"*Whatever P and Q may stand for, we may show, à priori, that some P is Q.* For *All PQ is Q* by the law of identity, and similarly *All PQ is P*; therefore, by a syllogism in *Darapti*, *Some P is Q.*"—How would you deal with this paradox? [From Dr. Keynes's *Formal Logic.*]

Solution by H. MacColl, B.A.

Let ϕ (P, Q) be any formula in logic or mathematics. If the formula holds good for all intelligible values or meanings of P and Q, it is valid; if it does not, it is invalid. For example, in mathematics the formula $P^2-Q^2 = (P-Q)(P+Q)$ is valid; the formula $PQ = P+Q$ is not. Any argument of the form AB ∴ C makes four assertions; (1) it asserts A; (2) it asserts B; (3) it asserts C; and (4), by the symbol ∴ (or word "therefore") it asserts AB : C, that AB implies C. I maintain, in opposition to the generality of logicians, that *if any one of these four assertions is false, the argument is false.* On this common sense principle, the argument of the question (like all syllogistic arguments as usually given in logical text-books) is invalid. To prove this, let A denote "All PQ is Q," let B denote "All PQ is P," and let C denote "Some P is Q." The argument AB ∴ C here fails when the classes P and Q are *real but mutually exclusive;* for then A, B, C are all three false. I hold that A and B are then false because the class PQ being by hypothesis *unreal* (or non-existent) can neither be contained in the *real* class Q nor in the *real* class P; and C is false because P and Q are, by hypothesis, mutually exclusive. But, if we strike out the symbol ∴ (or word "therefore") and replace it, as in my *Symbolic Logic and its Applications* (Longmans), by : (the symbol of implication), the invalid formula AB ∴ C becomes then the valid formula AB : C, which only asserts that *if* all PQ is Q, and all PQ is also P, *then* some P is Q. In this valid conditional form the formula neither asserts A nor B nor C; *it only asserts that it is never the case that* (with the meanings assigned) A *and* B *are true while* C *is false*—an assertion which is incontrovertible. It thus appears that the "paradox" (like every syllogism in its customary text-book "therefore" form) is but a specious fallacy. It is incorrect to say that "whatever P and Q may stand for, we may show *a priori* that some P is Q"; but it is correct to say that whatever P and Q may stand for, *if* the class PQ is wholly contained both in the class Q and in the class P, *then* some member of the class P is also a member of the class Q. Similarly the standard syllogism "All X is Y, all Y is Z, *therefore* all X is Z," should be "*If* all X is Y, and all Y is Z, *then* all X is Z."

16248. (W. J. Dobbs, M.A.)—The edges of a tetrahedron are of lengths a, a, b, b, c, c, opposite edges being equal. Show that its volume is $\frac{1}{12}\sqrt{[2(b^2+c^2-a^2)(c^2+a^2-b^2)(a^2+b^2-c^2)]}$.

[Of the many Solutions sent in it is only possible to publish a few typical ones.—Ed.]

Solutions (I.) *by* Mahendra Nath, D.E., M.A., B.Sc.; (II.) *by* Prof. Sanjána, M.A.; (III.) *by* M. T. Naraniengar, M.A., *and* A. M. Nesbitt, M.A.; (IV.) *by* W. F. Beard, M.A., *and* James Blaikie, M.A.; (V.) *by* M. S. Venkataranga Aiyar.

(I.) It is easily seen from a figure that all the plane faces of such a tetrahedron must be congruent, so that if A, B, C be the angles of the triangle that forms the base, the angles BOC, COA, AOB are equal to A, B, C respectively. Now the volume of the tetrahedron

$$= \tfrac{1}{6}abc\sqrt{(1-\cos^2 A-\cos^2 B-\cos^2 C+2\cos A\cos B\cos C)}$$
$$= \tfrac{1}{6}abc\sqrt{(4\cos A\cos B\cos C)}$$

[because, for a plane triangle,

$$\cos^2 A+\cos^2 B+\cos^2 C+2\cos A\cos B\cos C = 1]$$
$$= \tfrac{1}{12}\sqrt{(2\,.\,2bc\cos A\ 2ca\cos B\ 2ab\cos C)}$$
$$= \tfrac{1}{12}\sqrt{[2(b^2+c^2-a^2)(c^2+a^2-b^2)(a^2+b^2-c^2)]}.$$

N.B.—Such a tetrahedron has the very remarkable property that the sum of the three plane angles which form each solid angle is two right angles.

(II.) The volume is given by $V^2 = -F/144$, where F is the function

$$\Sigma a^2(d^2-e^2)(d^2-f^2)+\Sigma a^2d^2(a^2-b^2-c^2)+a\,b^2c^2,$$

whose vanishing gives the relation between the six joins of four points in a plane (Salmon, §§ 52, 53). Therefore in the present case

$$V^2 = \tfrac{1}{144}[\Sigma a^4(b^2+c^2-a^2)-\Sigma a^2(a^2-b^2)(a^2-c^2)-a^2b^2c^2]$$
$$= \tfrac{1}{144}[2(b^2+c^2-a^2)(c^2+a^2-b^2)(a^2+b^2-c^2)].$$

(III.) Let a sphere have its centre at a vertex of the tetrahedron; then obviously the angles of the solid angle at that vertex are together equal to two right angles. Hence, if α, β, γ denote the sides of the spherical triangle formed, $\alpha+\beta+\gamma = \pi$. Now, if θ be the altitude of the spherical triangle on the side γ,

$$\sin\theta\sin\alpha = 2n = 2\sqrt{(\cos\alpha\cos\beta\cos\gamma)} \ (\text{since } \alpha+\beta+\gamma = \pi).$$

But, evidently, volume of the tetrahedron

$$\tfrac{1}{3}\text{ base}\times\text{alt.} = \tfrac{1}{6}abc\sin\alpha\sin\theta = \tfrac{1}{3}abc\sqrt{(\cos\alpha\cos\beta\cos\gamma)}$$
$$= \tfrac{1}{12}\sqrt{[2((a^2+b^2-c^2)(b^2+c^2-a^2)(c^2+a^2-b^2)]},$$

since α, β, γ are equal to the angles of a plane triangle of sides a, b, and c. [Rest in *Reprint.*]

16014. (R. F. Davis, M.A.)—Where is there to be found an investigation of the locus of the focus of a parabola which passes through three given points?

Discussion by θ. β.

The tangential equation of a parabola inscribed in the triangle of reference is $t\sqrt{\lambda}+\sqrt{\mu}-(1+t)\sqrt{\nu}=0$,

λ, μ, ν being the perpendiculars from the angular points on the typical line. We get the focus by writing

$$\lambda = x-x_A,\quad \mu = x-x_B,\quad \nu = x-x_C,$$

where $x=\xi+i\eta$ and $\xi\eta$ are Cartesians. Take the origin at C, and the axis of ξ along CB, so that we have now $\lambda = x-a$, $\mu = x-be^{iC}$, $\nu = x$. This gives

$$\xi+i\eta = x = -\frac{(at^2-be^{iC})^2}{4t(t+1)(at+be^{iC})} = -\frac{(at^2-be^{iC})^2(at+be^{-iC})}{4t(t+1)(a^2t^2+b^2+2abt\cos C)},$$

and so the locus required is a unicursal quintic: the real asymptotes correspond to $t=0$, $t=\infty$, $t=-1$, which give lines parallel to the sides of the triangle. In particular, $t=\infty$ gives $\eta=\frac{1}{4}b\sin C$, so that this asymptote divides AB, AC in the ratio (3 : 1); as already proved by Mr. Youngman (see *Reprint*, N.S., Vol. XI., p. 84) for the equilateral triangle. Clearly the other asymptotes are similarly related to the other sides. However these asymptotes are *not* inflexional tangents, as in the special case, but in an *isosceles* triangle the asymptote parallel to the base is an inflexional *tangent*. The factor $a^2t^2+b^2+2abt\cos C$ in the denominator indicates that the curve passes through the circular points; but the tangents there do *not* meet at the circum-centre of ABC in general. It appears that this feature is present only when ABC is equilateral.

The expression for x has two squared factors in the numerator: this shows that C is a focus, and that the lines from C to the circular points are *bitangents*. Similarly for A, B. This property agrees with Mr. Youngman's results for the equilateral triangle.

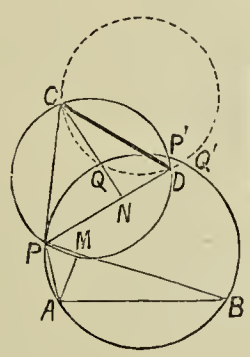
Mr. Youngman's second special case can be treated similarly to the above; but there is nothing fresh to be added, except that the origin is a cusp and (a, b) is the focus.

16110. (James Blaikie, M.A.)—Trace from geometrical considerations the locus of a point P which moves so that two given straight lines AB, CD subtend the same angle at the point, considering the cases where where ABCD is (1) a square, (2) a rectangle, (3) a parallelogram, (4) an irregular quadrilateral.

Note by C. E. Youngman, M.A.

The nature of the curves depicted in the Proposer's Solution (*Reprint*, New Series, Vol. XII., p. 44) is nicely brought out by the help of analysis.

Take the general case, and, in order that the locus may be a continuous curve, say that AB and CD must subtend equal or supplementary angles at P; then the circle PAB intersects the locus again on the circle PCD (at P′) and on the image in CD of the circle PCD (at Q and Q′). Draw AM, CN perpendicular to BP, DP. Then



$$AM : PM = CN : PN;$$

therefore

$$AM.PB : PM.PB = CN.PD : PN.PD;$$

that is, the areas PAB, PCD are in the ratio of the powers of P with respect to the circles on AB, CD as diameters. Let, then, $(\pm a, 0)$ be the co-ordinates of A and B, and $(c\pm h, d\pm k)$ those of C and D, and we have as the equation of the locus

$$ay(x^2+y^2-2cx-2dy+c^2+d^2-h^2-k^2)$$
$$\pm(kx-hy-kc+hd)(x^2+y^2-a^2)=0 \quad\ldots\quad (1),$$

the $\pm$ being necessary to account for the various signs which the areas and powers may have. Thus the locus consists in general of two circular cubics; P, P′ in the figure will lie on one of them, and Q, Q′ on the other. Also, it can be seen that AD and BC subtend equal or supplementary angles at P and P′, but not at Q, Q′; and we may infer that to any quadrangle such as ABCD there belong three cubics altogether, the complete locus of those points at which some pair or other of opposite sides of the quadrangle appear equal.

For an interesting example, let the quadrangle be orthocentric; consider its corners as the in- and ex-centres $I_1I_2I_3$ of a triangle of reference ABC, and take I_2 and I_1I_3 as the base pair of sides. For these, the two cubics are (in trilinears, with C and L written for $\Sigma a\beta\gamma$ and $\Sigma a\alpha$) $(C-\beta L)(\gamma+\alpha)(1+\cos B)\pm(C+\beta L)(\gamma-\alpha)(1-\cos B)=0$.

Here the upper sign gives

$$C(\gamma+\alpha\cos B)-\beta L(\gamma\cos B+\alpha)=0,$$

which simplifies into

$$-\alpha(\beta^2-\gamma^2)+\beta\cos C(\gamma^2-\alpha^2)+\gamma\cos B(\alpha^2-\beta^2)=0.$$

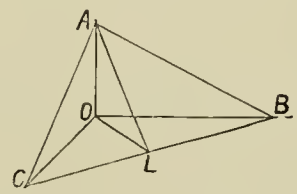
This form of the equation shows that the cubic is the locus of isogonal pairs in ABC whose join is perpendicular to BC; hence a proposition which it might be interesting to prove directly:—If AB, AC, touching a conic, cut a vertical tangent at B, C, and if all three touch the circles (I), (I_1), (I_2), (I_3), then II_2 and I_1I_3 subtend equal or supplementary angles at either focus; and so do II_3 and I_1I_2.

Returning to the original AB, CD, suppose them parallel, and accordingly put $k=0$ in equation (1). The asymptotes then turn out to be $y(h\mp a)=hd$, *i.e.*, $h(d-y)\pm ay=0$; hence they divide the distance between AB and CD in the ratio of CD to AB. (It should be remarked that the asymptotes are not generally identical with the lines IJ, KL of the Proposer's solution; his argument only proves them parallel to those lines.) Now let AB, CD, remaining parallel, become equal; this needs $h=a$. Then the asymptote of the upper sign cubic goes off to infinity, and the cubic becomes a rectangular hyperbola $d(x^2-y^2)-2cxy+y(c^2+d^2)-a^2d=0$. Once this hyperbola is suggested, it is easy enough to prove otherwise that it forms part of the locus; but to get it from the cubic is prettier, and this seems a particularly good example of the transformation.

16264. (Professor Neuberg.)—Le plan tangent en un point quelconque de la surface $xyz=k$ rencontre les axes coordonnés rectangulaires Ox, Oy, Oz aux points A, B, C. Trouver le lieu de l'orthocentre du triangle ABC.

Solutions (I.) *by* James Blaikie, M.A.; (II.) *by* A. M. Nesbitt, M.A., *and others.*

(I.) The tangent plane to the surface $xyz=k$ at the point x', y', z' is



$$(x-x')y'z'+(y-y')z'x'+(z-z')x'y'=0,$$

reducing to $x/x'+y/y'+z/z'=3$.

The equations to BC are therefore

$$x/x'+y/y'=3,\quad z=0;$$

and the equation to the plane through OA perpendicular to BC is $xx'=yy'$. Thus we see that the planes $yy'=zz'$, $zz'=xx'$ pass through the orthocentre of ABC. To find the locus required we must eliminate x', y', z' from the equations

$$x/x'+y/y'+z/z'=3,\quad xx'=yy'=zz',\quad x'y'z'=k.$$

From these we obtain

$$x^2/xx'+y^2/yy'+z^2/zz'=(x^2+y^2+z^2)/xx'=3,$$
$$xx'yy'zz'=(xx')^3=kxyz.$$

Thus the equation of the required locus is $(x^2+y^2+z^2)^3=27kxyz$.

(II.) If $(\alpha\beta\gamma)$ be the point of tangency, the vertices of the triangle ABC have for co-ordinates $(3k/\beta\gamma, 0, 0)$, $(0, 3k/\gamma\alpha, 0)$, $(0, 0, 3k/\alpha\beta)$. Also the foot of the perpendicular from C on AB is the same as the foot of that from O, so that its co-ordinates at once come out to be

$$\{3k\beta/[\gamma(\alpha^2+\beta^2)],\ 3k\alpha/[\gamma(\alpha^2+\beta^2)],\ 0\}.$$

Thus the equations to the perpendicular from C on AB are

$$x/\beta = y/\alpha = (3k-\alpha\beta z)/[\gamma(\alpha^2+\beta^2)].$$

Similarly for the perpendicular from B on AC. These yield for the co-ordinates of orthocentre $3\beta\gamma k/\Sigma\beta^2\gamma^2$, $3\gamma\alpha k/\Sigma\beta^2\gamma^2$, $3\alpha\beta k/\Sigma\beta^2\gamma^2$. Thus

$$\Sigma x^2 = 9k^2/\Sigma\beta^2\gamma^2 \quad\text{and}\quad xyz = 27k^5/(\Sigma\beta^2\gamma^2)^3,$$

whence $\quad 27k^5/xyz=(9k^2/\Sigma x^2)^3 \quad$ or $\quad 27kxyz=(x^2+y^2+z^2)^3$,

the required locus.

10599. (Professor Gram.)—Résoudre l'équation

$$[abx(x-a-b)]^{\frac{1}{2}}+[bcx(x-b-c)]^{\frac{1}{2}}+[cax(x-a-c)]^{\frac{1}{2}}=[abc(a+b+c)]^{\frac{1}{2}}.$$

Solution by Constance I. Marks, B.A.

The given equation is

$$[abx(x-a-b)]^{\frac{1}{2}}+[bcx(x-b-c)]^{\frac{1}{2}}+[cax(x-a-c)]^{\frac{1}{2}}=[abc(a+b+c)]^{\frac{1}{2}}.$$

Assume a, b, c either *all* positive or *all* negative and the signs of the roots ambiguous. By inspection $x=a+b+c$ satisfies the equation when two of the roots on the left are taken with the same sign as that on the right and the third of opposite sign.

16301. (W. J. Greenstreet, M.A.)—If r', ρ' are radius vector and radius of curvature of the inverse of a curve corresponding to r, ρ, find $r/\rho+r'/\rho'$ in terms of the angle between the tangent and radius vector of the curve or its inverse.

Solution by S. T. Shovelton, M.A.

From the equation $p/r=p'/r'$, we have

$$1/r^2(r\,dp-p\,dr)=1/r'^2(r'dp'-p'dr'),$$

or $\quad dr/r^2(r^2/\rho-p)=dr'/r'^2(r'^2/\rho'-p')\ldots\ldots\ldots\ldots(1).$

Now, since $\quad rr'=\kappa^2,\quad dr/r+dr'/r'=0.$

Therefore, from (1), $\quad r/\rho+r'/\rho'=p/r+p'/r'=2\sin\phi.$

Note on the Nine-Point Circle.

By W. Gallatly.

Let D, E, F be the mid-points of ABC $(a > b > c)$; D′, E′, F′ the feet of the perpendiculars.

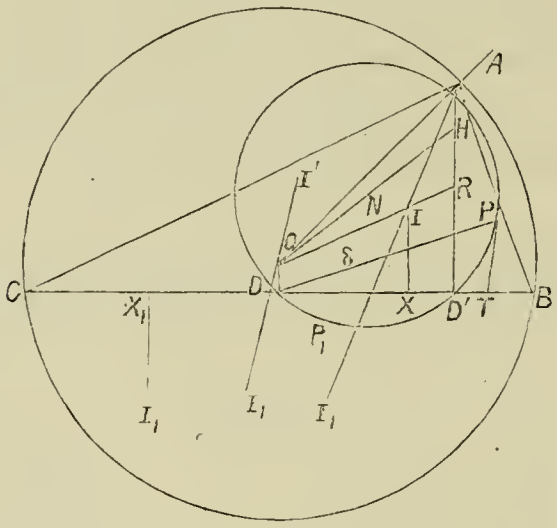
Let P, P_1, P_2, P_3 be the Feuerbach points where the in- and ex-circles touch the nine-point circle, centre N, and let the in-circle cut DP again in δ.

Then, since P is a centre of similitude for the circles I and N,

$$D\delta : DP = R-2r : R;$$

$$\therefore\ D\delta . DP : DP^2 = R^2-2Rr : R^2; \quad \therefore\ DX/f = DP/R : (OI = f);$$

$$\therefore\ OIX \text{ or } ORD' = DPT \text{ (PT is a tangent).}$$



Also $OAR = B-C = DPD'$; $\therefore$ $PDT = D'PT = AOR$ or AOI.

Similarly $P_1DT = AOI'$; $\therefore$ $\frac{1}{2}PNP_1 = PDP_1 = IOI' = OIX - OI_1X_1$.

But
$$\tan OIX = \frac{DX}{IX-OD} = \frac{\sin B - \sin C}{\cos B + \cos C - 1},$$

$$\tan OI_1X_1 = \frac{DX_1}{I_1X_1 + OR} = \frac{\sin B - \sin C}{\cos B + \cos C + 1};$$

$$\therefore\ \tan \tfrac{1}{2}PNP_1 = \tan PDP_1 = \tan IOI' = \frac{2(\sin B - \sin C)}{1 - 2\cos A}.$$

Similarly
$$\tan \tfrac{1}{2}P_2NP_3 = \tan P_2DP_3 = \frac{2(\sin B + \sin C)}{1 + 2\cos A}.$$

By solving the triangles INI_1 and I_2NI_3,

$$\sin PDP_1 = \sin \tfrac{1}{2}PNP_1 = \frac{\frac{1}{2}(b-c)}{\sqrt{(dd_1)}} \quad (NI = d),$$

$$\sin P_2DP_3 = \sin \tfrac{1}{2}.P_2NP_3 = \frac{\frac{1}{2}(b+c)}{\sqrt{(d_2d_3)}}.$$

Or the sines may be deduced from the tangents by employing the formula $4dd_1/R^2 = (1-2r/R)(1+2r_1/R)$

$$= (1 - 8\sin\tfrac{1}{2}A \sin\tfrac{1}{2}B \sin\tfrac{1}{2}C)(1 + 8\sin\tfrac{1}{2}A\cos\tfrac{1}{2}B\cos\tfrac{1}{2}C)$$
$$= 4(\sin B - \sin C)^2 + (1 - 2\cos A)^2,$$

and
$$4d_2d_3/R^2 = 4(\sin B + \sin C)^2 + (1 + 2\cos A)^2.$$

Hence
$$\text{Area of } P_1P_2P_3 = \tfrac{1}{16}.\frac{(b+c)(c+a)(a+b)}{d_1d_2d_3}R^2.$$

And, if Q be the area of the quadrilateral $PP_1P_2P_3$,

$$Q = \frac{R^2}{16}\frac{(b+c)(c+a)(a+b)}{d_1d_2d_3} + \frac{R^2}{16}\frac{(a-b)(b-c)(c+a)}{dd_1d_3};$$

$$\therefore\ 16.dd_1d_2d_3/[R^2(a+c)].Q$$
$$= d(b+c)(a+b) + d_2(a-b)(b-c)$$
$$= b(a+c).(R - r + r_2) - (b^2+ac)(r_2+r)$$
$$= b(a+c)R(1 + 4\sin^2\tfrac{1}{2}B) - (b^2+ac)\,4\sin\tfrac{1}{2}B\,(a+c)/b\sin\tfrac{1}{2}B$$
$$= R(a+c)(a-c)^2/b;$$
$$\therefore\ Q = \tfrac{1}{16}R^3/b\,(a^2-c^2)^2/dd_1d_2d_3$$

QUESTIONS FOR SOLUTION.

16328. (H. Stanley Redgrove, F.C.S.)—Let a given rod of elasticity e and length l be rigidly fixed at one end. The rod is bent, so that the straight line joining its two extremities makes an angle ϕ with the line representing the original position of the rod. Find the work done (gravity, &c., to be neglected).

16329. (L. Isserlis, B.A.)—Show that the equation

$$\frac{dy}{dx} = \frac{[(ha)x^2 + (ba)xy + (bh)y^2]x + (hc)x + (bc)y}{-[(ha)x^2 + (ba)xy + (bh)y^2]y + (ac)x + (hc)y}$$

can be integrated when $(a_1-b_1)/h_1 = (a_2-b_2)/h_2$.

[(ha) denotes $h_1a_2 - h_2a_1$. Similarly for the other coefficients, so that $(ah) = -(ha)$.]

16330. (S. Narayana Aiyar.)—Evaluate the integrals

$$(1)\quad \int \frac{\cos^n x}{\cos(x+\alpha_1)\cos(x+\alpha_2)\cos(x+\alpha_3)\ldots\cos(x+\alpha_n)}dx,$$

$$(2)\quad \int \frac{\sin^n x}{\cos(x+\alpha_1)\cos(x+\alpha_2)\cos(x+\alpha_3)\ldots\cos(x+\alpha_n)}dx.$$

16331. (*Communicated by* Professor E. B. Escott.)—Sum to n terms the series

$$\frac{1.3}{1.2.3.4} + \frac{1.3.5}{1.2.3.4.5} + \frac{1.3.5.7}{1.2.3.4.5.6} + \ldots$$

(G. Chrystal, *Algebra*, Part 2, chap. xxxi., Exer. 25, No. 25).

16332. (R. W. D. Christie.)—Prove the following equations

$$(p_np_{n+1})^2 + (2q_nq_{n+1})^2 = q_{2n+1}^2, \quad p_np_{n+1} - 2q_nq_{n+1} = \pm 1 \ldots\ldots (1, 2),$$

where
$$p_n^2 - 2q_n^2 = \pm 1;$$

hence show that an infinite number of endless chains of equations can be formed such as $3^2+4^2 = 5^2$, $20^2+21^2 = 29^2$, ...,

$6^2+8^2 = 10^2$, $40^2+42^2 = 58^2$, ...,

... ...

proceeding vertically or horizontally.

16333. (D. Biddle.)—$N = S^2 + A$. Prove that when the sum of the following series is integral, not only when complete, but also when short of completion, N is composite :—

$$\frac{A}{S} + \frac{N}{S(S-1)} + \frac{N}{(S-1)(S-2)} + \frac{N}{(S-2)(S-3)} + \ldots,$$

Also show how, by aid of such sum, to factorise N; and discuss methods of readily calculating the value of the successive terms, or sums of terms.

16334. (Lt.-Col. Allan Cunningham, R.E.)—Factorise completely (into prime factors) $N = (60601^6 + 60602^6)$;—has 29 figures.

16335. (Professor Sanjána, M.A.)—Two of the quantities a, b, c being given, find the third, so that the expression

$$a^4 + b^4 + c^4 - 2a^2b^2 - 2b^2c^2 - 2c^2a^2$$

may be a perfect square. [The given quantities might be entire quadratic surds; the required quantity should be rational.]

16336. (M. V. Arunachalan, M.A.)—Solve

$$\frac{2(1-ab)xy}{x+1} = \frac{(1-a^2)(x+y)}{y+1}, \quad \frac{2(1-ab)xy}{y+1} = \frac{(1-b^2)(x+y)}{x+1}.$$

16337. (James Blaikie, M.A.)—ABCD is a tetrahedron in which all the edges are tangents to the same sphere meeting it at the points L, M, N, P, Q, R on BC, CA, AB, DA, DB, DC; prove that

(1) $AB + CD = AC + BD = AD + BC$,

(2) LP, MQ, NR are concurrent.

16338. (Professor Neuberg.)—On donne trois droites a, b, c situées d'une manière quelconque dans l'espace. Deux points A, B se déplacent sur c en conservant une distance constante. L'intersection des plans Aa, Bb engendre un hyperboloïde. Réciproquement, un hyperboloïde à une nappe peut être engendré ainsi d'une infinité de manières.

16339. (M. T. Naraniengar, M.A.)—In the cardioide $r = a(1-\cos\theta)$, show that the locus of the intersection of normals at the points α, 2α is a circle. Interpret the result geometrically.

16340. (H. L. Trachtenberg, B.A.)—Prove that the two conics which pass through the angular points of a triangle, and touch, at the centre of gravity and orthocentre respectively, the quartic which has double points at the angular points of the triangle and passes through the centre of gravity, the orthocentre, the Brocard points, and the circular points at infinity, meet again on the circum-circle.

16341. (Professor Nanson.)—A conic passes through three given points and cuts a given join PQ harmonically. Find the locus of the pole of PQ.

16342. (C. E. Youngman, M.A.)—As in Question 16123, let a circle PQR touch a parabola at P, pass through its focus, and cut it again at Q, R. Prove that $QR = 2(PQ \sim PR)$.

16343. (W. F. Beard, M.A.)—ABC is a triangle; the escribed circle opposite A, whose centre is I, meets the circum-circle at D; ID produced meets the circum-circle again at E. Prove that IE is equal to the diameter of the circum-circle.

16344. (W. J. Greenstreet, M.A.)—In a triangle ABC, $B = C = nA$. Divide the triangle into n isosceles triangles, the equal sides of which are all equal.

16345. (R. J. Whitaker, B.A.)—Prove that the sum of the squares on the tangents from the angular points of a triangle to the nine-point circle is equal to half the sum of the squares on the sides of the triangle.

OLD QUESTIONS AS YET UNSOLVED (IN OUR COLUMNS).

10820. (A. Kinsely.)—Find the greatest number of globes one inch in diameter that can be placed in a hemispherical bowl one foot in diameter.

10800. (Professor Hudson, M.A.)—If two circles can be drawn each to have double contact with an ellipse internally, the points of contact being the ends of conjugate diameters, and to touch one another, prove that the eccentricity of the ellipse must be greater than $\frac{2}{3}$.

10842. (Professor Sir R. S. Ball, F.R.S.)—A rigid body, capable of rotating around a fixed point is in stable equilibrium. If the body, when slightly displaced from its position by being rotated about an axis, continues for ever to vibrate around this axis, this line is called a normal axis. Prove that (1) there are in general three normal axes; (2) when forces have a potential, the three normal axes are conjugate diameters of the momental ellipsoid; (3) they may be determined geometrically.

11042. (Professor Catalan.)—Démontrer que

$$X_n \frac{dX_{n-1}}{dx} - X_{n-1}\frac{dX_n}{dx} = -\frac{n}{1-x^2}(X_n^2 - 2xX_nX_{n-1} + X_{n-1}^2).$$

11308. (G. H. Bryan.)—Given three points of a harmonic range, show how to find the fourth point by a linkage of jointed bars. Also generalize by giving a linkage connecting four points in such a manner that their cross ratio always remains constant.

11405. (Professor Crofton, F.R.S.)—Prove that

$$\frac{x + 2^r\frac{x^2}{1.2} + 3^r\frac{x^3}{1.2.3}}{1 + x + \frac{x^2}{1.2} + \ldots} = x + \frac{\Delta^2 0^r}{1.2}x^2 + \frac{\Delta^3 0^r}{1.2.3}x^3 + \ldots + x^r.$$

NOTICE TO CORRESPONDENTS.

It is requested that all Mathematical communications should be sent to the Mathematical Editor,

Miss Constance I. Marks, B.A., 10 Matheson Road, West Kensington, W.

Vol. XII. (New Series) of the "Mathematical Reprint" is now ready, and may be had of the Publisher, Francis Hodgson, *89 Farringdon Street, E.C. Price to Subscribers, 5s.; to Non-Subscribers, 6s. 6d.*

THE LONDON MATHEMATICAL SOCIETY.

Thursday, November 14th, 1907 (Annual General Meeting).—Prof. W. Burnside, President, in the Chair.

Messrs. B. M. Walker, W. J. Harrison, B. B. Ghosál were elected members.

Messrs. T. J. I'A. Bromwich and E. Cunningham were admitted into the Society.

The Council and Officers for the ensuing Session were elected as follows:—President, Prof. W. Burnside; Vice-Presidents, Prof. A. R. Forsyth and Prof. H. M. Macdonald; Treasurer, Prof. J. Larmor; Secretaries, Prof. A. E. H. Love and Mr. J. H. Grace; other members of the Council, Dr. H. F. Baker, Mr. A. Berry, Mr. T. J. I'A. Bromwich, Mr. A. L. Dixon, Prof. E. B. Elliott, Mr. G. H. Hardy, Dr. E. W. Hobson, Sir W. D. Niven, Mr. H. W. Richmond, Mr. A. E. Western.

The following papers were communicated:—

"The Invariants of a Binary Quintic and the Reality of its Roots," Dr. H. F. Baker.

"Addendum to a Paper on the Inversion of a Repeated Infinite Integral," Mr. T. J. I'A. Bromwich.

"On a Transformation of a certain Hypergeometric Series," Prof. M. J. M. Hill.

"Generalisation of a Theorem in the Theory of Divergent Series," Mr. G. H. Hardy.

"On Hyper-Complex Numbers," Mr. J. H. Maclagan Wedderburn.

"Uniform and non-Uniform Convergence and Divergence of a Series and the Distinction between Right and Left," Dr. W. H. Young.

"Application of Quaternions to the Problem of the Infinitesimal Deformation of a Surface," Mr. J. E. Campbell.

"Nodal Cubics through Eight Given Points," Mr. J. E. Wright.

"On a Transformation of Hypergeometric Series," Rev. Dr. E. W. Barnes.

"A general Theorem on Integral Functions of Order Less than One-half," Mr. J. E. Littlewood.

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SYLLABUS.

I. (Sept. 26.) *Types of Troublesome Pupils:* Meaning of type: advantages of classification by types: dangers of such classifications: temperament and possibility of modifying it: correction of character: the ideal pupil as standard: deflections from the standard in two directions according as we consider intellect or conduct: manipulation of characters as actually found in school: specification of types and suggestions for their treatment.

II. (Oct. 3.) *The Individual and the Class:* Individual must be studied as individual: not always necessarily treated as individual: advantages of class teaching over individual instruction: maximum and minimum sizes of classes: relation between subject and size of class: teaching class through individual and *vice versa*: psychology of class as such: disintegration and redintegration of class: class leaders and their manipulation.

III. (Oct. 10.) *Parents and Home Lessons:* Spheres of the parent and the teacher in relation to school work: parent as teacher: parent as "preparation master": "causing another to learn": special characteristics of home work as compared with work done in school: principles on which kind and amount of home work have to be determined: the unit of home study: dangers of home study, with special reference to the nature of the home.

IV. (Oct. 17.) *Curricula and Organization:* Curricula as data: limits of variation of curricula at discretion of teacher: principles underlying the determination of curricula: relation of curricula to organization: organization by "sides": the Form System: Composite Forms: the place of the specialist teacher: various kinds of organization in which the pupils have a share in school government: principles on which the allocation of pupils to particular forms is determined.

V. (Oct. 24.) *Time Tables:* Esoteric and exoteric time tables: degree of detail: practical considerations in the drawing up of time tables: the unit of time in relation to the day, week, and term: fixed and variable quantities: application of law of diminishing returns: danger signal of fatigue: *ennui* and weariness: the influence of the meal hour: mental "second wind": danger of pathological brightness of intellect.

VI. (Oct. 31.) *Examinations and Corrections:* Educational and administrative purposes of examinations: evils of external examinations and means to minimize those evils: advantages of class examinations: how to draw up an examination paper: hints for pupils on how to work an examination paper: how to mark examination papers: various methods of marking ordinary written work in school: practical suggestions to save waste of time and ensure efficiency.

VII. (Nov. 7.) *Lecturing in School:* Distinction between lecturing and teaching: why lecturing is discredited in schools: recent tendency to return to lecturing in History, Science, and even Geometry: work demanded of the pupil who is taught on the lecture system: art of listening: preparation of lecture materials by teacher and by pupil: length of lectures in relation to stage of pupils: combination of teaching and lecturing.

VIII. (Nov. 14.) *Note-taking and Text-books:* Note-taking a correlative of lecturing: difficulties and dangers of note-taking: its place at different stages in the school course: how far it can be taught: relation to different school subjects: note-book as text-book: relation beteen teacher's work and the text-book: relation of text-book to pupil's private study: classification of text-books: tests of a good text-book.

IX. (Nov. 21.) *Apparatus:* Distinction from furniture: aids in actual teaching: danger of being dominated by apparatus: over-elaborate apparatus: ready-made and home-made apparatus: permanent and temporary: hints for preparing apparatus: various kinds of school maps: the optical lantern: various kinds of blackboards: use of the blackboard for writing and for drawing: uneducational and excessive use of the blackboard.

X. (Nov. 28.) *Special Methods:* The place in practical school work of the various special methods, such as the Socratic, the Heuristic, the Concentric: the principle of correlation of studies: dangers of rigid application of any one of the special methods: illustrations of the application of these methods to the ordinary school subjects such as Arithmetic, Grammar, Elementary Science: the next two lectures will supply further illustrations.

XI. (Dec. 5.) *Connection between Language and Literature:* The three vocabularies and their relation to language and literature respectively: possibility of *teaching* literature at all at the various stages of school life: relation of conversation and composition to literature proper both in English and in foreign languages: suggestions of exercises in English Composition suitable to prepare for the study of English Literature.

XII. (Dec. 12.) *Connection between Geography and History:* Geography a science: possibility of a science of History: neither can be taught quite independently of the other, though Geography is the more independent: Geography is the space setting of History: limitations of the correlation between the two subjects: applications of the Concentric and Heuristic methods: suggestions for practical problems that will bring out the true relations between Geography and History.

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